CRPL-F3.6

IONOSPHERIC DATA

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PREPARED BY CENTRAL RADIO PROPAGATION LABORATORY
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CENTRAL RADIO PROPAGATION LABORATORY
NATIONAL BUREAU OF STANDARDS
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CONTENTS

The symbols and terminology used in this report are those adopted by the International Radio Propagation Conference, and given in detail on pages 24 to 26 of the report IRPL-C61, "Report of International Radio Propagation Conference," and in the section on "Terminology" in report IRPL-F5.

Beginning with IRPL-F14 the symbol L, defined as follows, is used in detailed tabulations of hourly values of ionosphere characteristics observed at Washington:

L or l = critical frequency, muf, or muf factor for F1 layer omitted because no definite and abrupt change in slope of the h'f curve occurs either for the first reflection or for any of the multiples.

In the past, ionospheric conditions were summarized on a monthly basis by using average or mean values for each hour of the day for each month. However, following the recommendations of the International Radio Propagation Conference, held in Washington 17 April to 5 May 1944, beginning with data for 1 Jan. 1945, median values were used by IRPL wherever possible. Thus, median values are given for Washington, for all stations reporting directly to the CRPL, for the Canadian stations, and for all others sending to the CRPL detailed tabulations from which medians can be computed.

Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The monthly median values used here are the values equaled or exceeded on half the days of the month at the given hour. The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in the report referred to above, IRPL-C61.

a. For all ionospheric characteristics:
   Values missing because of A, B, C or F (see terminology referred to above) are omitted from the median count.

b. For critical frequencies and virtual heights:
   Values of f^oF2 missing because of E are counted as equal to or less than the lower limit of the recorder. Ordinarily, values of virtual heights, f^oF1, and f^oE missing for this reason are omitted from the median count.
   Values missing because of D are counted as equal to or greater than the upper limit of the recorder.
   Values missing because of G are counted:
   1. For f^oF2, as equal to or less than f^oF1.
   2. For h'F2, as equal to or greater than the median.
   Values missing for any other reason are omitted from the median count.

c. For muf factors (M-factors):

Values missing because of G are counted as equal to or less than the median.
Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because no Es reflections appeared, the equipment functioning normally otherwise, are counted as equal to or less than the median f°E, or equal to or less than the lower frequency count of the recorder.
Values of fEs missing for any other reason, and values of hEs missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

It is expected that this practice will be of assistance in evaluating the monthly median Washington data.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Beginning with CRPL-F33, an additional group of symbols is used in recording the Washington, D.C. data. The list of additional symbols and their meanings follows:

N -- unable to make logical interpretation.
P -- trace extrapolated to a critical frequency.
Q -- the F1 layer not present as a distinct layer.
R -- curve becomes incoherent near the F2 critical frequency.
S -- no observation obtainable because of interference.
U -- forked record.
Z -- triple split near critical frequency.

For a more detailed explanation of the meaning and use of these symbols, see the report CRPL-7-1, Preliminary Instructions for Obtaining and Reducing Manual Ionospheric Records.

MONTHLY AVERAGE AND MEDIAN VALUES OF WORLD-WIDE IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 58 and figures 1 to 111 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL predictions of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data:

Australian Council for Scientific and Industrial Research, Radio Research Board:
- Brisbane, Australia
- Canberra, Australia
- Cape York, Australia
- Hobart, Tasmania
- Townsville, Australia

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geophysical Section:
- Watheroo, W. Australia

British Department of Scientific and Industrial Research, Radio Research Board:
- Slough, England

Canadian Radio Wave Propagation Committee:
- Churchill, Canada
- Clyde, Baffin I.
- Ottawa, Canada
- Portage la Prairie, Manitoba
- Prince Rupert, Canada
- St. John's, Newfoundland

New Zealand Radio Research Committee:
- Campbell I.
- Christchurch, New Zealand (Canterbury University College Observatory)
- Fiji Is.
- Kermadec Is.
- Rarotonga I.

South African Council for Scientific and Industrial Research:
- Capetown, Union of S. Africa
- Johannesburg, Union of S. Africa

Scientific Research Institute of Terrestrial Magnetism, Moscow, U.S.S.R.:
- Alma Ata, U.S.S.R.
- Bay Tiksey, U.S.S.R.
- Bukhta Tikhaya, U.S.S.R.
- Chita, U.S.S.R.
- Leningrad, U.S.S.R.
- Moscow, U.S.S.R.
- Sverdlovsk, U.S.S.R.
- Tomsk, U.S.S.R.

Carnegie Institution of Washington (Department of Terrestrial Magnetism):
- Huancayo, Peru

United States Army Signal Corps:
- Fukaura, Japan
- Okinawa I.
- Shibata, Japan
- Tokyo, Japan
- Wakkanai, Japan
- Yamakawa, Japan

National Bureau of Standards (Central Radio Propagation Laboratory):
- Adak, Alaska
- Baton Rouge, Louisiana (Louisiana State University)
- Boston, Massachusetts (Harvard University)
- Fairbanks, Alaska (University of Alaska, College, Alaska)
- Guam I.
- Manila , Philippine Is.
- Maui, Hawaii
- Palmyra I.
- San Francisco, California (Stanford University)
- San Juan, Puerto Rico (University of Puerto Rico)
- Trinidad, British West Indies
- Washington, D. C.
- White Sands, New Mexico
- Wuchang, China (National Wuhan University)

All India Radio (Government of India), New Delhi, India:
- Bombay, India
- Delhi, India
- Madras, India
- Peshawar, India

Indian Council of Scientific and Industrial Research, Radio Research Committee:
- Calcutta, India

Radio Wave Research Laboratory, Central Broadcasting Administration:
- Chungking, China
- Lanchow, China
- Peiping, China

French Ministry of Naval Armaments (Section for Scientific Research):
- Fribourg, Germany

National Laboratory of Radio-Electricity (French Ionospheric Bureau):
- Bagneux, France

Philippine Republic, Department of National Defense:
- Leyte, Philippine Is.

Norwegian Defense Research Establishment, Florida, Bergen, Norway:
- Oslo, Norway
- Tromso, Norway

Beginning with CRPL-F26, publication of tables of so-called "provisional data" reported to the CRPL by telephone or telegraph was discontinued. The reason for this change in policy is that users of the data hitherto published in this form receive them through established channels sooner than they reach them in the F-series. Furthermore, having two sets of data, "provisional" and "final" for the same station for the same month leads to confusion.

It must be emphasized that there is no change in the methods used for rapid reporting and exchange of data. The change has to do only with the printing of provisional data in the F-series.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of these errors are due to:

a. Differences in scaling records where spread echoes are present.

b. Omission of values where f^oF2 is less than or equal to f^oF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values where critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. Predictions for individual stations used to construct the charts may be more accurate than the values read from the chart since some smoothing of the contours is necessary to allow for the longitude effect within a zone. The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts, beginning with August 1945:

Month	Predicted Sunspot No.	Month	Predicted Sunspot No.
July 1947	116	July 1946	73
June 1947	112	June 1946	67
May 1947	109	May 1946	67
April 1947	107	April 1946	62
March 1947	105	March 1946	51
February 1947	90	February 1946	46
January 1947	88	January 1946	42
December 1946	85	December 1945	38
November 1946	83	November 1945	36
October 1946	81	October 1945	23
September 1946	79	September 1945	22
August 1946	77	August 1945	20

AT WASHINGTON, D. C.

The data given in tables 59 to 70 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Terminology and Scaling Practices."

Since February 1947, the fEs and h'fEs readings reported have been the values of fEs and h'fEs observed on the hourly record instead of the highest value of fEs and the lowest value of h'fEs observed during the hourly interval centered on the hour, as had been the practice up to that time.

IONOSPHERE DISTURBANCES

Table 71 presents ionosphere character figures for Washington, D.C., during July 1947, as determined by the criteria presented in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, magnetic K-figures, which are usually covariant with them.

Table 72 lists for the stations whose locations are given the sudden ionosphere disturbances observed on the continuous field intensity recordings made at the Sterling Radio Propagation Laboratory during July 1947.

Table 73 lists for the stations whose locations are given the sudden ionosphere disturbances observed at the Brentwood and Somerton, England, receiving stations of Cable and Wireless Ltd. from June 8 to July 22, 1947.

Table 74 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, June 1947, compared with the CRPL daily radio disturbance warnings, which are primarily for the North Atlantic paths, the CRPL weekly radio propagation forecasts of probable disturbed periods, and the half-day Cheltenham, Maryland, geomagnetic K-figures.

The radio propagation quality figures for the North Atlantic are prepared from radio traffic and ionospheric data reported to the CRPL, in the manner described in detail in report IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," issued February 1, 1946.

The radio propagation quality figures for the North Pacific are prepared from radio traffic and ionospheric data reported to the CRPL, in a manner similar to that of IRPL-R31. The master scale of IRPL-R31 was used to formulate conversion scales for the North Pacific reports. Beginning with CRPL-F23, issued July 1946, the North Pacific radio propagation quality figures reported are prepared from these revised conversion scales.

These radio propagation quality figures give a consensus of opinion of actual radio propagation conditions as reported by the half day over the two general areas. It should be borne in mind, however, that though the quality may be disturbed according to the CRPL scale, the cause of the disturbance is not necessarily known. There are many variables that must be considered. In addition to ionospheric storminess itself as the cause, conditions may be reported as disturbed because of seasonal characteristics, such as are particularly evident in the pronounced day and night contrast over North Pacific paths during the winter months, or because of improper frequency usage for the path and time of day in question. Insofar as possible, frequency usage is included in rating the reports. Where the actual frequency is not shown in the report to the CRPL, it has been assumed that the report is made on the use of optimum working frequencies for the path and time of day in question. Since there is a possibility that all the disturbance shown by the quality figures is not due to ionospheric storminess alone, care should be taken in using the quality figures in research correlations with solar, auroral, geomagnetic, or other data. Nevertheless, these quality figures do reflect a consensus of opinion of actual radio propagation conditions as found on any one half day in either of the two general areas.

AMERICAN AND ZÜRICH PROVISIONAL RELATIVE SUNSPOT NUMBERS

Table 76 presents the daily median values of relative sunspot numbers as reported by American observers for July 1947. The reports have been reduced, by appropriate constants, approximately to the Zürich scale of relative sunspot numbers. The monthly relative sunspot number is the mean of the daily median values listed in the table. This method was devised by Mr. A. H. Shapley, while a member of the staff of the Department of Terrestrial Magnetism, Carnegie Institution of Washington. Details will be found in his article, "American Observations of Relative Sunspot Numbers in 1945 for Application to Ionospheric Prediction," Popular Astronomy, vol. 54, No. 7, pp. 351-358. The criteria for A observers have been modified slightly, beginning with September 1946. In order for an observer's report to be included in the American sunspot numbers, the mean deviation of the reduction factors for his observations for the four preceding months must have been within 15% of the 4-month running mean of his reduction factors, rather than within an interval of ± 0.16 of that running mean. This avoids favoring observers with small reduction factors and discriminating against observers with large reduction factors. In addition sunspot numbers must have been reported for at least one-half of the month during three-quarters of the preceding year. This will tend to restrict the observers to those whose observations are consistent from month to month without rejecting the work of observers for whom weather conditions are unsatisfactory for observations during some months of the year.

In addition, table 76 lists the daily provisional Zürich sunspot numbers. The first issue in which these numbers appear is CRPL-F35.

SOLAR CORONAL INTENSITIES OBSERVED AT CLIMAX, COLORADO

In table 75 the intensities of the green (λ 5303A), first red (λ 6374A), and second red (λ 6704A) lines of the solar corona as observed during July 1947, by the High Altitude Observatory of Harvard University and the University of Colorado at Climax, Colorado, are given for every 5° measured from astronomical north positively through the east for each day on which observations were possible. An arbitrary intensity-scale of approximately 0 to 40 is used. To convert from astronomical north and to determine the positions relative to the solar rotational equator, subtract the algebraic value of the position-angle of the solar axis. This quantity varies from +26 to -26 degrees during the year, and is tabulated in the nautical almanacs. If observations are uncertain, the initials l.w. (low weight) follow the date. The time of observation in hours GCT is listed. Dashes indicate that the intensity for that position is below the observable threshold. Absence of observation made at a given position is indicated by X.

CORRECTIONS TO SUNSPOT NUMBERS APPEARING IN IRPL-R23

In IRPL-R23, "Solar Cycle Data for Correlation with Radio Propagation Phenomena," issued October 1, 1945, a number of errors greater than 0.1 units have been found in table I, "Monthly average sunspot numbers," and table II, "Twelve-month running average relative sunspot numbers." The correct values are listed below. Some of the errors in table I were carried over in the computation to table II. Table III, "Smoothed relative sunspot numbers" has been found unreliable and should not be used. Smoothed numbers may be obtained by interpolation in table II.

<u>Errata in Table I</u>

1833	June	1.0	1870	Feb.	114.9
1835	Apr.	61.5	1875	Dec.	9.9
1838	Feb.	84.8	1894	May	101.2
1846	Dec.	65.5	1941	May	29.5
1868	Apr.	36.6			

Errata in Table II

	1770	1833	1834	1835	1837	1838	1846	1847
Dec.								
Jan.		12.4		25.3		123.6		65.7
Feb.	110.7	11.8		29.6		119.0		66.2
Mar.		11.5		34.2		114.4		73.4
Apr.		11.8		41.6		112.5		77.9
May		10.7		47.5		109.8		88.2
June		10.0		53.3		107.3		94.8
July		8.5		56.8		103.1	61.5	
Aug.		8.0		63.6		100.0	63.5	
Sept.		8.2		70.5	127.1		63.0	
Oct.		7.6		77.1	127.6		64.8	
Nov.		7.5	20.3		126.7		62.8	
Dec.		7.1	23.2		128.9		64.0	

	1867	1868	1869	1870	1875	1876	1893	1894
Dec.								
Jan.		18.3		107.0		11.6		87.2
Feb.		20.3		113.1		11.8		88.6
Mar.		22.8		119.3		11.3		83.7
Apr.		25.6		123.9		12.0		82.7
May		29.6		131.1		12.1		82.4
June		33.8		137.0		11.5		80.8
July		37.3		139.1	17.1			78.0
Aug.		41.1		140.0	17.0			76.3
Sept.		44.7	79.9		16.4			74.9
Oct.		46.9	88.8		16.2			75.6
Nov.	13.9		98.7		14.0			75.2
Dec.	15.9		104.7		13.5		86.3	

Table 1

Washington, D.C. (39.0°N, 77.5°W) July 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270	(6.5)					3.0	(2.8)
01	270	6.1					2.6	2.7
02	270	5.8					3.1	2.7
03	280	(5.4)					1.8	(2.7)
04	270	(5.0)					2.8	(2.8)
05	270	5.0			100	1.7	3.0	2.9
06	250	5.8	235		100	2.3	3.6	3.0
07	330	6.2	220	4.5	90	2.9	4.4	(3.0)
08	370	6.8	220	(4.9)	90	3.3	4.1	2.8
09	370	(7.0)	200	5.2	90	3.6	4.1	2.8
10	395	(7.0)	200	(5.4)	90	(3.8)	4.2	(2.7)
11	420	(7.1)	200	(5.4)	90	(3.9)	4.0	(2.6)
12	460	7.1	200	5.6	90	(4.0)	3.7	2.6
13	440	7.1	200	(5.4)	90	(4.0)	4.4	2.6
14	430	7.2	200	(5.3)	90	(3.9)	4.4	2.6
15	440	7.1	200	(5.2)	100	3.8	4.5	2.6
16	430	7.1	200	(5.1)	100	3.6	4.0	2.6
17	380	7.0	210	4.8	90	3.3	4.1	2.7
18	335	7.2	230		100	2.7	4.2	2.8
19	255	7.2			100	1.9	3.7	2.8
20	250	7.2					3.2	2.8
21	260	(7.4)					3.0	(2.8)
22	270	(7.1)					3.5	(2.7)
23	280	(6.8)					3.6	(2.8)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Clyde, Baffin I. (70.5°N, 68.6°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	355	5.3						
01	350	5.1						
02	380	5.5						
03	440	5.2						
04	515	5.0						
05	580	5.0						
06	570	5.3						
07	550	5.5						
08	590	5.4						
09	550	5.3						
10	590	5.7						
11	560	5.5						
12	570	5.6						
13	570	5.6						
14	555	5.6						
15	600	5.4						
16	500	5.6						
17	500	5.6						
18	480	5.6						
19	450	5.4						
20	425	5.5						
21	350	5.4						
22	380	5.5						
23	350	5.6						

Time: 75.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute; 1.9 Mc to 13.0 Mc, manual operatio

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	415	5.0				2.0	5.5	2.6
01	380	5.2				2.4	5.4	2.4
02	435	5.2				2.2	5.6	2.5
03	478	5.2	322	3.6		2.4	5.4	2.3
04	532	5.4	290	4.0		2.7	5.2	2.3
05	528	5.6	270	4.2		2.9	5.6	2.3
06	555	5.6	260	4.4		3.1	5.6	2.3
07	570	6.0	250	4.6		3.3	5.1	2.2
08	570	6.0	250	4.8		3.5	3.6	2.2
09	580	5.9	250	4.9		3.7	4.0	2.2
10	570	6.0	235	5.0		3.6	4.5	2.2
11	580	6.1	230	5.1		3.7	4.9	2.2
12	582	6.0	235	5.1		3.8	5.3	2.3
13	598	6.0	232	5.1		3.7	4.3	2.2
14	580	6.0	238	5.1		3.6	4.4	2.2
15	560	6.1	240	5.0		3.5	3.3	2.2
16	510	6.2	240	5.0		3.4	3.3	2.4
17	500	6.2	250	4.7		3.2	3.0	2.4
18	450	6.1	260	4.5		3.0	3.4	2.4
19	400	5.9	270	4.0		2.7	3.3	2.5
20	335	6.0				2.4	4.3	2.6
21	325	5.4				2.2	3.3	2.7
22	350	5.0				1.9	4.5	2.6
23	360	5.0				2.0	4.5	2.6

Time: 150.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.

Table 4

Churchill, Canada (58.8°N, 94.2°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	340	5.1					5.0	2.6
01	330	5.2					3.6	2.5
02	340	4.8					3.6	(2.6)
03	335	4.6			140	2.6	3.2	2.7
04	420	4.8	280	3.2	130	3.6	3.2	2.5
05	470	5.0	250	4.1	130	3.0	3.2	(2.3)
06	460	5.3	235	4.2	110	3.0	2.4	2.5
07	490	5.2	230	4.6	105	3.4		2.4
08	515	5.8	250	4.8	100	3.6		(2.4)
09	490	6.0	240	5.1	100	3.8		2.5
10	555	6.1	240	5.1	100	3.6		2.3
11	510	6.3	240	5.2	100	3.5	3.3	2.4
12	480	6.4	240	5.3	105	3.5	3.3	2.4
13	520	6.7	240	5.3	100	3.6		2.3
14	490	6.8	230	5.2	110	3.5		2.4
15	490	6.8	240	5.2	110	3.6		2.4
16	450	6.8	240	5.0	105	3.6		2.3
17	490	6.8	240	4.9	120	3.4		2.4
18	430	6.5	250	4.6	110	3.1		2.4
19	390	6.0	280	4.2	120	3.1		2.5
20	340	6.0	275	3.6	120	3.0	2.6	2.5
21	340	5.6	300	3.0	140	2.8	3.0	2.5
22	300	5.7					5.0	(2.6)
23	330	5.0					5.4	2.5

Time: 90.0°W.
Sweep: 2.2 to 16.0 Mc in 1 minute; supplemented by manual operation, 2.0 Mc to 13.5 Mc.

Table 5

Prince Rupert, Canada (54.3°N, 130.3°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	305	5.0						2.6
01	330	4.4						2.5
02	330	4.2					2.2	2.4
03	360	4.1					3.4	2.5
04	370	4.4	350	2.9	E	1.6	3.4	2.4
05	470	4.9	300	3.6	120	2.1	4.0	2.4
06	520	5.4	270	4.0	120	2.6	4.0	2.3
07	550	5.7	250	4.4	110	3.0	4.0	2.3
08	525	6.0	230	4.7	110	3.3	4.3	2.3
09	550	6.0	220	4.9	110	3.5	4.4	2.3
10	550	6.0	220	5.0	110	3.7	4.3	2.3
11	550	6.1	230	5.2	110	3.8	4.5	2.3
12	570	6.2	230	5.3	110	3.8	4.3	2.3
13	570	6.2	225	5.3	110	3.8	4.4	2.3
14	600	6.2	230	5.3	110	3.9	4.3	2.3
15	570	6.3	230	5.2	110	3.8	4.1	2.3
16	545	6.3	230	5.2	110	3.6	4.1	2.3
17	505	6.2	240	5.0	110	3.4	4.0	2.4
18	460	6.2	250	4.9	110	3.2	4.0	2.5
19	380	6.2	260	4.5	120	2.8	4.0	2.6
20	325	6.4	270	3.8	120	2.3	4.1	2.6
21	300	6.4			E	1.8	3.5	2.7
22	300	6.2					2.4	2.6
23	300	5.9						2.6

Time: 120.0°W.
Sweep: Manual operation.

Table 6

Adak, Alaska (51.9°N, 176.6°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	295	6.6						2.6
01	300	6.2						2.6
02								
03								
04								
05	470	6.6	270	4.0	100	2.6	3.7	2.3
06	450	7.0	250	4.5	100	3.0	4.0	2.4
07	460	7.2	250	4.8	100	3.3	5.0	2.4
08	480	7.0	240	5.1	100	3.6	5.3	2.5
09	515	6.8	220	5.3	100	3.7	6.0	2.5
10	520	6.6	(220)	5.4	100	3.9	5.7	2.4
11	515	[6.4]N	[220]N	[5.4]N	[100]N	[3.9]N		
12	595	6.0	220	5.4	100	3.9	4.9	2.3
13	620	6.2	220	5.4	100	3.9	5.0	2.3
14	560	6.1	220	5.4	100	(3.9)	4.1	2.4
15	550	6.2	220	5.3	100	3.7	4.3	2.4
16	520	6.2	220	5.1	100	3.5	4.1	2.5
17	[440]N	[6.2]N	[240]N	[4.8]N	[100]N	[3.2]N		
18	360	6.4	260	(4.5)	100	2.8	4.7	2.7
19	310	6.5	270		120	2.2	4.4	2.7
20	285	6.3			120		3.6	2.8
21	280	6.3					3.2	2.7
22	290	7.0					2.8	2.6
23	280	6.9					2.3	2.6

Time: 180.0°W.
Sweep: 1.2 Mc to 15.5 Mc. Manual operation.

Table 7

Portage la Prairie, Manitoba (49.9°N, 98.3°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	315	5.2					2.9	2.4
01	330	4.9					3.7	2.4
02	350	4.4					2.7	2.4
03	350	4.0					2.8	2.4
04	340	4.4					3.0	2.5
05	360	4.6	290	3.4	110	2.0	2.1	2.4
06	450	5.0	250	4.0	100	2.6		2.4
07	525	5.3	235	4.2	100	3.2		2.3
08	550	5.4	210	4.6	100	3.4		2.3
09	540	5.8	220	4.8	100	3.6		2.3
10	550	6.0	210	4.8	100	3.8		2.3
11	545	6.2	220	5.0	100	3.9		2.3
12	550	6.3	210	5.1	100	3.9		2.3
13	520	6.2	220	5.2	100	3.8		2.4
14	510	6.3	210	5.2	100	3.7		2.3
15	510	6.4	220	5.0	100	3.8		2.4
16	500	6.6	220	5.0	100	3.7		2.4
17	455	6.5	230	4.8	100	3.4		2.4
18	400	6.7	240	4.5	100	3.0		2.5
19	330	6.8	250	4.0	110	2.6		2.6
20	270	7.0			120	2.0		2.6
21	280	7.1					2.0	2.7
22	300	6.3					2.0	2.5
23	300	5.7					2.6	2.4

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes 30 seconds.

Table 8

Ottawa, Canada (45.5°N, 75.8°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	340	5.0						2.6
01	345	4.8						2.6
02	375	4.5						2.6
03	345	4.0						2.7
04	330	4.2						2.7
05	300	4.8						2.7
06	330	5.5	260	4.2	120	2.8		2.7
07	345	5.7	240	4.6	120	3.0		2.6
08	360	G	220	5.1	110	3.5		2.5
09	540	G	220	5.4	110	3.7		2.4
10	425	G	220	5.4	110	3.8		2.4
11	G	G	220	5.5	110	3.9		G
12	G	G	215	5.4	110	3.9		2.5
13	G	G	220	5.5	110	3.8		G
14	G	G	230	5.6	110	3.8		G
15	460	6.8	220	5.3	115	3.7		2.4
16	445	6.9	230	5.1	120	3.5		2.4
17	430	6.8	235	5.2	120	3.4		2.5
18	355	7.0	250	4.5	130	2.8		2.6
19	290	7.0	250	3.4			2.7	2.6
20	300	7.4						2.6
21	310	7.2						2.6
22	310	7.0						2.6
23	310	6.4						2.6

Time: 75.0°W.
Sweep: 1.7 Mc to 18.0 Mc. Manual operation.

Table 9

Boston, Massachusetts (42.4°N, 71.2°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	315	6.5					1.1	2.5
01	345	6.0					1.2	2.4
02	350	5.6					1.4	2.5
03	340	4.9					1.8	2.5
04	350	5.0					1.8	2.5
05	350	5.5			110	2.3	2.1	2.7
06	350	6.2			118	2.6		2.7
07	450	6.3	270	5.0	120	3.3		2.6
08	460	6.8	250	5.2				2.4
09	450	6.9						2.5
10	460	7.4					3.0	2.4
11	455	7.0						2.4
12	500	7.3						(2.5)
13	470	7.2						2.4
14	470	7.2	250	5.4				2.4
15	450	7.3	260	5.3				2.5
16	440	7.2	270	5.0				2.5
17	400	7.2	295	5.2				2.6
18	350	7.4						2.6
19	330	7.5						2.6
20	320	7.6					1.6	2.6
21	300	7.6						2.6
22	300	7.4					2.0	2.6
23	310	7.0						2.5

Time: 75.0°W.
Sweep: 0.8 Mc to 14.0 Mc in 1 minute.

Table 10

Peiping, China (39.9°N, 116.4°E) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		9.5						3.1
01		9.2						3.0
02		9.4						3.0
03		8.9						3.0
04		8.4						3.0
05		8.5						3.0
06		9.5						3.1
07		10.1						3.2
08		10.5						3.2
09		10.6						3.3
10		10.7						3.4
11		10.6						3.2
12		11.0						3.4
13		10.9						3.5
14		10.9						3.5
15		10.8						3.4
16		10.4						3.1
17		10.5						3.2
18		10.1						3.2
19		10.0						3.1
20		9.6						3.1
21		9.1						3.0
22		9.2						3.0
23		9.0						2.9

Time: 120.0°E.
Sweep: 1.7 Mc to 20.0 Mc in 15 minutes. Manual operation.

Table 11

San Francisco, California (37.4°N, 122.2°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	6.1					2.6	2.5
01	300	6.0					2.3	2.5
02	300	5.7					2.5	2.5
03	300	5.4					2.2	2.4
04	310	5.2					2.0	2.5
05	280	5.5	300	3.1		1.8	2.1	2.5
06	400	6.2	240	4.2	100	2.5	3.0	2.4
07	430	6.5	220	4.7	100	3.2	4.3	2.4
08	455	6.8	200	5.1	100	3.5	4.3	2.4
09	460	7.2	200	5.4	100	3.7	4.6	2.4
10	460	7.2	200	5.5	100	3.8	4.3	2.4
11	460	7.1	200	5.6	100	3.9	4.4	2.4
12	460	7.4	200	5.8	100	3.9	4.7	2.4
13	420	7.3	200	5.7	100	3.9	4.2	2.4
14	425	7.4	200	5.8	100	3.9		2.5
15	415	7.4	200	5.6	100	3.8	4.3	2.5
16	400	7.2	205	5.5	100	3.6	4.2	2.6
17	360	7.3	220	5.1	100	3.3	3.6	2.6
18	280	7.2	220	4.7	100	2.3	4.1	2.7
19	250	7.2					3.9	2.8
20	250	7.0					3.6	2.8
21	250	6.9					4.7	2.7
22	270	6.5					3.7	2.6
23	300	6.2					3.0	2.5

Time: 120.0°W.
Sweep: 1.5 Mc to 18.5 Mc in 4.5 minutes.

Table 12

White Sands, New Mexico (32.6°N, 106.5°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	320	6.3					3.2	2.4
01	315	6.6					2.8	2.4
02	305	6.3					2.4	2.4
03	320	6.1					3.0	2.5
04	320	5.7					2.8	2.4
05	320	5.8	330				3.8	2.5
06	340	6.4	250	4.2	120	2.6	4.6	2.5
07	440	6.6	240	4.7	110	3.3	4.9	2.4
08	440	7.1	230	5.1	110	3.6	5.4	2.4
09	455	7.8	220	5.3	110	3.8	5.3	2.4
10	410	7.2	220	5.4	110	3.9	5.4	2.5
11	430	7.2	220	5.5	110	4.0	4.8	2.5
12	450	7.4	220	5.6	115	4.2	4.8	2.5
13	460	7.6	220	5.5	110	4.0	4.9	2.5
14	430	7.5	220	5.5	110	4.1	4.8	2.4
15	420	7.7	230	5.3	110	3.9	4.8	2.5
16	410	7.8	235	5.2	110	3.6	4.8	2.5
17	400	7.6	240	5.1	115	3.4	4.9	2.6
18	315	7.2	245		110	2.7	4.3	2.7
19	290	7.4					4.0	2.7
20	300	7.0					3.7	2.6
21	300	7.0					3.8	2.5
22	300	6.6					3.7	2.5
23	320	6.4					3.5	2.4

Time: 105.0°W.
Sweep: 0.79 Mc to 14.0 Mc in 2 minutes.

Table 13

Wuchang, China (30.6°N, 114.4°E) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	330	9.2					4.8	2.7
01	300	9.0					4.6	2.7
02	295	8.4					3.7	2.7
03	290	7.9					3.6	2.6
04	295	7.6					3.2	2.6
05	310	7.4					2.6	2.6
06	270	8.4			120	2.3	3.7	2.8
07	270	8.8			120	3.0	5.0	2.8
08	280	9.2	250	6.2	120	3.6	5.8	2.7
09	348	9.4	255	6.6	120	3.9	7.1	2.6
10	390	9.7	240	6.5	120	4.0	7.1	2.6
11	405	10.4	260	6.4	120	4.1	7.4	2.6
12	400	11.0	260	6.2	120	4.1	6.6	2.6
13	390	11.2	255	6.2	120	4.0	6.2	2.6
14	390	11.0	245	6.1	120	3.8	5.0	2.7
15	380	11.0	240	6.1	120	3.8	5.7	2.6
16	368	11.2	240	5.8	120	3.5	5.0	2.7
17	360	11.0	255	5.5	120	3.4	4.4	2.7
18	330	10.5	260	5.0	120	2.9	5.0	2.8
19	295	9.5			120	2.4	4.3	2.8
20	290	9.2					3.6	2.8
21	312	8.6					4.7	2.7
22	320	8.9					4.6	2.6
23	320	8.9					4.7	2.6

Time: 120.0°E.
Sweep: 1.2 Mc to 19.0 Mc. Manual operation.

Table 14

Baton Rouge, Louisiana (30.5°N, 91.2°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	350	7.0					3.4	2.5
01	345	6.5						2.5
02	350	6.5						2.5
03	350	6.2						2.5
04	360	6.3						2.5
05	340	6.0						2.6
06	350	6.5	290	4.0	130	2.6	3.9	2.6
07	460	6.9	250	4.7	120	3.2	4.2	2.5
08	500	6.8	250	5.2	120	3.6	4.2	2.4
09	510	7.2	250	5.4	120	3.7	4.4	2.4
10	545	7.3	250	5.5	120	3.8	4.3	2.4
11	500	7.4	250	5.6	120	3.9		2.4
12	500	7.5	250	5.7	120	3.9		2.4
13	490	7.7	250	5.7	120	3.9		2.4
14	490	7.4	250	5.5	120	3.9		2.4
15	490	7.6	255	5.4	120	3.8	4.4	2.4
16	450	7.8	260	5.1	120	3.6	4.0	2.5
17	430	7.4	260	4.7	120	3.2	4.4	2.6
18	350	7.6	270		130	2.4	3.5	2.7
19	310	7.5					3.4	2.7
20	300	7.5					3.0	2.7
21	320	7.0						2.6
22	360	7.0					3.0	2.5
23	350	7.0						2.5

Time: 90.0°W.
Sweep: 2.0 Mc to 15.0 Mc in 5 minutes.

Table 15

Chungking, China (29.4°N, 106.8°E) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	340	9.2					6.2	2.5
01	340	8.9					6.8	2.5
02	330	8.2					5.6	2.5
03	335	8.2					5.3	2.4
04	355	7.7					4.5	2.4
05	320	7.6					5.1	2.5
06	300	8.8					6.3	2.7
07	290	9.5					7.8	2.6
08	315	9.8	245				9.6	2.5
09	400	10.6	250				9.8	2.4
10	400	10.6	240	6.3			9.6	2.4
11	400	11.3	235	6.6			9.0	2.4
12	420	11.5	240	6.3			8.4	2.4
13	410	12.3	235	6.3			7.6	2.4
14	420	12.3	240	6.2			7.0	2.4
15	400	12.3	240	6.0	95	4.0	6.4	2.4
16	390	11.7	250	5.6	100	3.8	6.4	2.5
17	360	11.3	265	5.3	100	3.3	5.6	2.5
18	340	11.3					5.6	2.5
19	320	10.8					4.8	2.5
20	350	9.8					6.4	2.4
21	360	9.4					6.4	2.3
22	360	9.3					5.2	2.4
23	360	9.5					5.3	2.4

Time: 105.0°E.
Sweep: 1.7 Mc to 20.0 Mc in 15 minutes. Manual operation.

Table 16

Maui, Hawaii (20.8°N, 156.5°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00							3.8	
01								
02								
03								
04								
05								
06	270	7.0	260	5.2	110	1.9	3.0	2.4
07	240	7.8	230	6.3	110	2.8		2.6
08	300	8.6	220	5.8	110	3.4		2.4
09	420	9.6	220	6.2	110	3.8		2.3
10	410	10.1	215	6.3	105	4.2	4.9	2.3
11	430	11.0	210	6.2	100	4.2		2.4
12	400	11.9	210	6.2	110	4.3	5.5	2.5
13	380	12.0	210	6.2	110	4.3		2.6
14	380	11.8	220	6.2	110	4.2		2.5
15	380	12.2	220	6.1	110	4.2	5.0	2.6
16	350	12.0	230	5.8	100	4.0	5.0	2.6
17	340	12.0	230	5.8	100	3.4	5.1	2.6
18	300	11.8	250	5.1	100	2.8	4.5	2.7
19	270	11.2					4.6	2.7
20	280	10.6					4.1	2.5
21	300	10.4					4.2	2.5
22	310	10.0					3.8	2.5
23	310	9.1					3.6	2.5

Time: 150.0°W.
Sweep: 1.2 Mc to 18.0 Mc in 15 minutes. Manual operation.

Table 17

San Juan, Puerto Rico (18.4°N, 66.1°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		10.6						2.6
01		9.8						2.8
02		8.8						2.6
03		8.5						2.6
04		7.9						2.5
05		7.6						2.6
06		8.1						2.7
07	300	8.4						2.7
08	310	9.5				3.4		2.7
09	355	10.0		5.5		3.7	4.7	2.5
10	375	10.6				4.0		2.5
11	390	10.9		6.0				2.5
12	380	10.9		6.2				2.5
13	385	11.1		6.0		4.2		2.5
14	380	11.0		5.8		4.2		2.5
15	380	11.1		5.8		4.0		2.6
16	370	10.8		5.4		3.6	4.5	2.6
17	360	10.2		4.8			4.7	2.6
18	325	9.8					4.4	2.6
19	310	9.4						2.5
20		9.2						2.6
21		9.4						2.6
22		(9.5)						2.6
23		9.8						2.6

Time: 60.0°W.
Sweep: 2.3 Mc to 13.0 Mc in 8 minutes.

Table 18

Guam I. (13.5°N, 144.8°E) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	345	(10.4)					3.6	(2.4)
01	330	10.3					4.0	(2.5)
02	300	9.8					4.5	2.7
03	280	9.4					4.0	2.8
04	250	8.3					3.4	2.9
05	240	7.3					3.0	2.9
06	268	7.3					4.6	2.9
07	250	9.1			115	2.7	6.0	2.8
08	238	10.0					6.5	2.7
09	230	10.2					7.5	2.4
10	340	10.9	228				6.8	2.3
11	430	11.6	225	(6.6)			7.2	2.3
12	455	12.2	220	(6.4)			6.5	2.3
13	465	12.5	220	(6.4)			6.5	2.3
14	470	13.0	220	(6.4)			6.5	2.3
15	470	13.4	222				6.8	2.2
16	445	13.5	230				5.8	2.2
17	250	13.6					6.6	2.2
18	265	12.9					6.3	2.2
19	315	11.7					5.3	2.2
20	400	10.9					3.6	2.1
21	405	10.5					2.4	2.0
22	400	10.3					2.6	2.2
23	390	(10.6)					3.6	(2.3)

Time: 150.0°E.
Sweep: 1.25 Mc to 18.8 Mc in 15 minutes. Manual operation.

Table 19

Trinidad, Brit. West Indies (10.6°N, 61.2°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	10.4						2.7
01	280	9.7						2.7
02	290	9.2						2.6
03	285	8.4						2.7
04	280	8.2						2.7
05	280	7.8						2.6
06	280	7.8					2.2	2.7
07	250	8.8			120	2.8	3.4	2.9
08	240	9.6	230		110	3.4	4.0	2.8
09	330	10.2	220	5.6	110	3.9	4.5	2.6
10	380	10.9	220	6.4	120	4.1	4.8	2.4
11	405	11.4	220	6.4	120	4.3	4.9	2.4
12	405	11.9	235	6.4	120	4.4	5.2	2.5
13	415	12.4	230	6.4	120	4.4	5.0	2.5
14	390	12.2	240	6.2	120	4.2	5.0	2.5
15	395	12.3	240	6.0	120	3.9	5.0	2.5
16	390	11.6	240	6.0	120	3.6	4.8	2.5
17	350	10.7	260	5.5	120	3.0	4.4	2.4
18	280	10.6			120	2.2	3.8	2.4
19	320	10.6					3.8	2.4
20	340	10.7					2.9	2.4
21	340	11.0					2.8	2.4
22	320	11.0					2.6	2.5
23	300	10.8					2.2	2.6

Time: 60.0°W.
Sweep: 1.2 Mc to 15.5 Mc. Manual operation.

Table 20

Palmyra I. (5.9°N, 162.1°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	(12.0)					2.6	(2.7)
01	280	(12.0)					2.1	(2.6)
02	270	11.5					2.3	(2.7)
03	260	10.7					2.2	2.8
04	250	8.9					2.1	2.8
05	240	8.0					2.1	2.8
06	300	7.3			205	1.7	2.7	2.7
07	250	8.4			120	2.9	4.0	2.7
08	240	9.4			100	3.5		2.5
09	240	10.3	220		100	3.8		2.3
10	260	11.0	220	5.5	100	4.2		2.3
11	300	11.5	210	5.7	100	4.3		2.2
12	320	12.1	210	5.7	105	4.4		2.2
13	375	12.3	200	6.3	110	4.5		2.1
14	390	12.5	220	6.3	100	4.2		2.1
15	340	12.4	220	6.4	100	4.0		2.2
16	280	12.0	220	6.2	100	3.6	4.4	2.2
17	250	12.0			100	3.0	4.5	2.2
18	280	(11.8)			150	2.2	4.6	(2.1)
19	360	11.4					3.7	(2.0)
20	415	10.2					2.7	(2.0)
21	370	(11.0)					2.0	(2.2)
22	340	11.7					2.8	(2.4)
23	300	12.4					3.0	(2.6)

Time: 157.5°W.
Sweep: 1.0 Mc to 13.0 Mc in 1.6 minutes.

Table 21

St. John's, Newfoundland (47.5°N, 52.7°W) May 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	6.4						2.6
01	270	5.4						2.7
02	280	4.6					2.2	2.7
03	270	4.2					1.6	2.7
04	280	4.7					1.7	2.7
05	240	5.5			100	2.2	2.7	3.0
06	220	6.2	230	4.2	100	2.6	3.5	3.2
07	280	6.5	220	4.9	100	3.0	3.8	3.1
08	310	6.7	220	5.2	90	3.4	4.1	3.0
09	320	7.0	210	5.6	100	3.6	4.6	3.0
10	345	7.2	205	5.8	100	3.8	4.2	2.9
11	400	7.4	210	6.0	90	4.0	4.3	2.8
12	400	7.4	210	6.0	90	4.0	4.3	2.3
13	400	7.6	210	6.0	90	3.8	4.2	2.8
14	410	7.8	210	6.0	90	3.9	3.9	2.8
15	390	7.8	210	5.8	90	3.8	3.8	2.8
16	340	8.2	220	5.6	100	3.6	3.6	2.8
17	310	8.6	220	5.3	100	3.3	3.6	2.9
18	290	8.8	230	4.8	100	2.9	4.2	2.9
19	240	9.0	225	3.7	100	2.2	3.4	3.0
20	240	8.6					2.7	2.9
21	240	8.0					1.5	2.8
22	250	7.4						2.7
23	250	6.8						2.7

Time: 52.5°W.
Sweep: 1.2 Mc to 20.0 Mc. Manual operation.

Table 22

Wakkanai, Japan (45.4°N, 141.7°E) May 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	8.4						2.6
01	300	8.2						2.5
02	300	7.9						2.5
03	300	7.7						2.4
04	310	7.6						2.5
05	270	8.4						2.6
06	250	9.2					3.7	2.6
07	295	9.6			100		5.0	2.6
08	320	10.0	235			3.8	5.2	2.7
09	340	9.8	230				5.1	2.7
10	385	9.5	235	5.7			5.6	2.5
11	370	8.8	220				5.2	2.5
12	405	8.8	225	6.4			(7.6)	2.4
13	380	9.4	230	6.1			5.0	2.6
14	350	8.8	240	5.5			4.8	2.6
15	350	8.9	250				5.0	2.6
16	340	8.8	230				5.0	2.6
17	305	9.0					5.2	2.7
18	290	8.6					4.5	2.7
19	300	8.6					4.0	2.7
20	295	8.5					3.1	2.5
21	300	8.5					2.8	2.5
22	300	8.3					2.4	2.6
23	300	8.4						2.6

Time: 135.0°E.
Sweep: 2.0 Mc to 17.0 Mc. Manual operation.

Table 23

Fukaura, Japan (40.6°N, 139.9°E) May 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	320	7.6					2.2	2.6
01	320	7.4					2.4	2.5
02	310	7.2					1.9	2.6
03	300	7.0					2.2	2.5
04	300	6.9					1.9	2.5
05	300	7.4			120	1.6	2.2	2.6
06	270	7.9			120	2.6	2.6	2.8
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19	290	7.7					4.0	2.8
20	320	7.4					5.4	2.6
21	320	7.5					4.0	2.6
22	320	7.5					3.6	2.5
23	320	7.5					2.4	2.6

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc. Manual operation.

Table 24

Peiping, China (39.9°N, 116.4°E) May 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		9.0						3.3
01		9.4						3.2
02		9.4						3.3
03		8.8						3.2
04		8.5						3.2
05		8.7						3.2
06		9.5						3.6
07		10.0						3.7
08		10.3						3.5
09		10.5						3.6
10		10.9						3.5
11		10.8						3.5
12		11.0						3.7
13		11.0						3.8
14		11.0						3.8
15		11.0						3.8
16		10.7						3.6
17		10.6						3.6
18		10.5						3.5
19		10.5						3.4
20		10.7						(3.3)
21		9.6						3.5
22		9.4						3.4
23		9.5						3.2

Time: 120.0°E.
Sweep: 1.7 Mc to 20.0 Mc in 15 minutes. Manual operation.

Table 25

Shibata, Japan (37.9°N, 139.3°E) May 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	310	9.3					3.0	2.6
01	300	8.8					2.6	2.7
02	300	8.5					3.0	2.6
03	290	7.9					2.6	2.6
04	300	7.7					2.6	2.6
05	290	8.7	270		115	1.8	2.8	2.7
06	270	10.0	260		120	2.7	3.5	2.9
07	290	10.4	240		120	3.3	4.8	2.8
08	310	10.4	240		120	3.6	5.6	2.7
09	355	10.8	230		110	3.9	5.5	2.6
10	370	11.2	230		110	4.0	5.4	2.6
11	370	11.2	230	6.3	110	4.0	5.4	2.6
12	380	11.7	220	5.9	120	4.1	5.8	2.6
13	380	11.2	230	5.9	120	4.1	5.6	2.6
14	380	11.2	235		110	4.1	5.6	2.6
15	355	10.7	240		110	3.8	4.6	2.7
16	335	10.4	245		110	3.6	4.7	2.7
17	330	10.2	250		115	3.1	5.4	2.7
18	300	9.9	280		120	2.4	5.1	2.8
19	290	9.2					4.3	2.8
20	305	8.5					5.2	2.6
21	325	9.0					5.1	2.6
22	320	9.4					4.2	2.6
23	310	9.4					3.5	2.6

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 15 minutes. Manual operation.

Table 26

Lanchow, China (36.1°N, 103.8°E) May 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	360	9.5					3.4	2.4
01	360	9.4					3.2	2.4
02	360	9.0					3.0	2.4
03	360	8.4					2.6	2.4
04	360	8.0					2.6	2.4
05	360	8.0					2.6	2.4
06	320	9.8			140	2.8	3.4	2.5
07	300	11.0	280		140	3.2	4.6	2.5
08	300	12.0	280		130		5.0	2.5
09	360	12.5	280		125		5.2	2.4
10	370	12.5	280	7.4	120		5.8	2.3
11	420	13.0	280	7.0	130			2.3
12	440	13.5	280	7.0	130			2.3
13	440	13.5	280	7.0	125			2.3
14	440	13.0	280	6.5	130		5.0	2.3
15	440	12.6	280	6.4	130		4.9	2.3
16	400	11.5	280	6.2	130		4.8	2.4
17	380	12.0	280	6.0	130		5.2	2.4
18	360	12.0	280		140		5.3	2.4
19	340	11.5					4.8	2.5
20	320	10.0					4.2	2.4
21	360	10.0					4.2	2.4
22	360	10.0					4.3	2.4
23	360	10.0					4.4	2.3

Time: 105.0°E.
Sweep: 2.4 Mc to 16.0 Mc in 15 minutes. Manual operation.

Table 27

Yamakawa, Japan (31.2°N, 130.6°E) May 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	310	10.1					3.8	2.5
01	310	10.0					3.5	2.6
02	300	9.5					3.2	2.6
03	290	8.9					2.6	2.5
04	300	8.4					2.6	2.5
05	300	8.4					2.4	2.5
06	280	9.3			120	2.4	3.0	2.7
07	280	10.2			110	3.1	4.8	2.7
08	290	10.4			110	3.6	5.5	2.6
09	350	10.8	230		105	3.8	6.5	2.4
10	395	11.4	230		110	4.0	7.0	2.4
11	400	12.2	230		105	4.2	7.4	2.4
12	400	13.0	230		110	4.2	7.0	2.4
13	400	13.0	240	5.6	110	4.2	6.6	2.5
14	400	13.1	240	5.4	110	4.2	5.6	2.4
15	390	12.7	240	5.2	110	4.2	5.9	2.5
16	385	12.4	255	5.0	110	3.8	5.8	2.5
17	360	12.1			110	3.5	6.5	2.5
18	320	11.8			110	2.7	5.4	2.6
19	300	10.7			110	2.1	5.5	2.6
20	320	10.2					6.5	2.5
21	320	9.9					7.8	2.4
22	330	10.1					4.9	2.4
23	320	10.4					4.0	2.5

Time: 135.0°E.
Sweep: 0.6 Mc to 18.5 Mc in 15 minutes. Manual operation.

Table 28

Chungking, China (29.4°N, 106.8°E) May 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	310	10.6					4.4	2.6
01	300	10.4					3.9	2.7
02	300	9.2					3.8	2.7
03	310	8.4					3.8	2.6
04	320	8.0					4.1	2.6
05	300	8.0					4.4	2.6
06	260	9.8					5.8	2.8
07	265	10.6					7.0	2.8
08	280	11.4	240				7.4	2.6
09	310	12.0	240				7.8	2.4
10	360	13.2	230				8.2	2.4
11	400	13.5	240	7.0	110		7.6	2.4
12	400	13.9	230	6.8	110	4.2	7.5	2.4
13	400	15.0	230	6.6	110	(4.5)	7.1	2.4
14	400	15.0	230	6.5	110	(4.3)	6.6	2.4
15	360	14.5	240	6.4	110	4.0	6.2	2.4
16	340	14.1	240	6.4	110	3.6	5.9	2.5
17	330	14.3	240		110	3.2	5.8	2.5
18	300	13.6					5.6	2.6
19	300	12.7					5.0	2.6
20	310	12.2					4.8	2.5
21	320	11.6					6.4	2.5
22	340	11.8					6.4	2.5
23	320	11.5					5.3	2.5

Time: 105.0°E.
Sweep: 1.7 Mc to 20.0 Mc in 15 minutes. Manual operation.

Table 29

Manila, Philippine Is. (14.6°N, 121.0°E) May 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	300	8.7						3.0
07	300	10.3						3.0
08	315	11.5						2.8
09	330	11.3						2.6
10	350	11.8						2.4
11	490	12.1						2.3
12	445	12.8						2.4
13	430	13.5						2.4
14	460	13.6						2.4
15	460	13.0						2.4
16	465	13.4						2.4
17	390	12.9						2.5
18	340	13.0						2.5
19	390	13.0						2.4
20	450	13.0						
21								
22								
23								

Time: 120.0°E.

Table 30

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) May 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	(270)	4.1						2.9
01	(280)	4.0						2.9
02	270	4.0						2.9
03	270	3.9						3.0
04	(250)	3.8						2.9
05	(270)	3.6						2.9
06	250	3.8						3.0
07	230	8.0				2.2		3.2
08	220	11.2			100	2.9		3.3
09	220	12.8	210		100	3.4		3.2
10	(240)	(13.6)	210		100	(3.7)		(3.1)
11	(250)	(14.0)	(210)		100	(3.9)		(3.0)
12	(280)	13.5	210		100	(4.0)		2.9
13	(290)	13.4	(210)		100	(3.9)		2.8
14	(300)	13.1	220		100	(3.8)		2.8
15	(290)	(13.0)	220		100	3.5		(2.7)
16	(280)	12.6	230		100	3.1		2.8
17	230	(12.4)			(110)	2.3		(2.9)
18	220	(11.6)					2.6	(3.0)
19	220	(10.0)					2.3	(3.0)
20	220	(9.2)						(3.1)
21	220	(7.6)						(3.2)
22	220	5.9						3.2
23	240	4.3						2.9

Time: 30.0°E.
Sweep: 2.0 Mc to 15.0 Mc in 8 seconds.

Table 31

Slough, England (51.5°N, 0.6°W) April 1947*

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	309	6.7					1.0	2.3
01	310	6.5					0.8	2.3
02	299	6.0					0.8	2.3
03	311	5.6					0.9	2.3
04	313	5.4					1.1	2.4
05	292	5.5	255**	3.2**	122	1.6	3.3	2.5
06	277	6.5	242	4.4	119	2.2		2.6
07	279	7.5	239	4.8	112	2.8		2.7
08	309	8.2	233	5.1	110	3.2		2.6
09	301	9.1	228	5.2	109	3.5		2.6
10	312	9.5	228	5.4	110	3.7		2.6
11	315	9.6	227	5.6	111	3.7		2.6
12	324	10.1	230	5.8	109	3.8		2.5
13	331	10.4	236	5.8	110	3.8		2.5
14	333	10.1	249	5.8	110	3.7		2.5
15	306	10.3	236	5.6	109	3.6		2.5
16	287	10.3	237	5.4	110	3.3		2.5
17	267	10.3	233	5.0	112	2.9		2.6
18	262	10.5	250**	4.9**	116	2.2		2.7
19	257	9.7			135	1.8	1.7	2.6
20	253	8.9						2.5
21	261	8.2						2.4
22	276	7.5						2.4
23	297	7.2						2.3

Time: Local.
Sweep: 0.5 Mc to 16.0 Mc in 4 minutes.
*Average values except f°F2 and fEs, which are median values.
**Less than 3 observations.

Table 32

Bagneux, France (48.8°N, 2.3°E) April 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	250	8.3						
07	255	8.5	250	5.3				
08	240	9.4	230	5.7				
09	240	D	220	5.3				
10	250	D	220	5.8				
11	275	D	230	5.7				
12	290	D	230	6.2				
13	250	D	232	6.5				
14	340	D	230	5.9				
15	250	D	240					
16	250	D	250					
17	270	D						
18	255	D						
19	260	(11.5)						
20	270	(10.3)						
21	300	(8.4)						
22	310	(8.4)						
23								

Time: 0.0°.
Sweep: 4.0 Mc to 11.2 Mc in 12 minutes.

Table 33

Lanchow, China (36.1°N, 103.8°E) April 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	320	10.0						2.5
01	320	9.4						2.5
02	320	9.2						2.5
03	320	8.0						2.5
04	320	7.4						2.5
05	320	7.6						2.5
06	310	9.4						2.6
07	280	11.8			140	2.9	3.6	2.8
08	280	12.8	260		140	3.5	3.9	2.6
09	280	13.5	270		130			2.6
10	300	14.0	260		130			2.5
11	310	14.6	280		130			2.5
12	320	15.0	260	7.0	120			2.5
13	320	15.0	280	7.0	130			2.5
14	320	15.0	260	7.1	130			2.5
15	320	14.5	280	6.6	120			2.5
16	305	14.0	265		120			2.5
17	300	13.5	275		120	3.5	4.0	2.6
18	290	13.2			120	2.8	4.5	2.6
19	260	12.8					4.6	2.7
20	280	11.2					4.0	2.7
21	280	11.3					4.2	2.5
22	280	10.5					4.2	2.7
23	320	10.6					3.1	2.5

Time: 105.0°E.
Sweep: 2.4 Mc to 16.0 Mc in 15 minutes. Manual operation.

Table 34

Brisbane, Australia (27.5°S, 153.0°E) April 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	7.8						2.7
01	300	7.7					2.7	2.6
02	290	7.5					3.0	2.8
03	270	6.9						2.8
04	285	6.6						2.6
05	290	6.3						2.7
06	270	7.4						2.9
07	240	10.5				2.5		3.1
08	240	12.3			120	3.1	3.3	3.2
09	230	D			110	3.5	4.0	(3.1)
10	230	D	230		110	3.3	4.6	
11	250	D	220		110	4.0	4.2	(2.9)
12	270	D	220		110	4.0	4.5	2.8
13	300	D	220		110	3.8	4.6	(2.8)
14	270	(12.5)	230		110	3.8	4.7	(2.8)
15	245	(12.3)	235		120	3.5	4.5	(2.9)
16	240	(12.0)			120	3.0	4.0	(2.8)
17	250	(11.7)					4.5	(2.9)
18	250	11.0					4.0	2.8
19	260	9.9					3.0	2.7
20	280	9.5					2.5	2.8
21	270	9.0					3.1	2.8
22	280	8.6					2.6	2.7
23	290	8.0						2.7

Time: 150.0°E.
Sweep: 2.2 Mc to 12.5 Mc in 2 minutes 30 seconds.

Table 35

Canberra, Australia (35.3°S, 149.0°E) April 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270	6.8						2.6
01	300	6.4						2.6
02	280	6.5						2.7
03	250	6.5						2.7
04	250	6.3						2.7
05	250	6.0						2.7
06	250	6.0						2.8
07	250	8.0						3.2
08	(240)	(11.1)			100	2.9		3.0
09	(250)	(13.0)			100	3.4		3.0
10	250	(13.0)			100	3.4		(3.0)
11	250	14.0			100	3.5		3.0
12	250	14.0			100	3.5		3.0
13	250	13.0			100	3.5		2.8
14	250	13.0			100	3.5		2.8
15	250	13.0			100	3.5		2.8
16	250	12.5			100	3.0		2.8
17	250	(12.0)			100	2.3		(3.0)
18	240	(11.0)						(3.0)
19	245	(9.2)						(2.8)
20	250	8.5						2.8
21	250	7.9						3.0
22	250	7.4						2.8
23	(260)	7.2						2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 36

Hobart, Tasmania (42.8°S, 147.4°E) April 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	6.0						2.5
01	300	(6.3)						(2.5)
02	300	5.8						2.6
03	300	5.8						2.6
04	298	(5.4)						(2.6)
05	300	5.3						2.6
06	290	4.6						2.6
07	250	(6.3)						3.0
08	245	8.5			120	2.7		3.1
09	250	8.8	212		120	3.0	2.8	3.2
10	250	9.0	200		100	3.1	2.9	3.2
11	250	(10.0)	200	5.0	100	3.2	3.1	(3.3)
12	250	(10.4)	195	5.6	98	3.3	3.0	3.2
13	240	(10.1)	245	5.0	100	3.5	3.3	(3.3)
14	250	(10.1)	200		100	3.3	3.3	(3.3)
15	250	(10.0)	260		100	3.1	2.9	(3.2)
16	240	(10.0)			100	2.7	1.8	3.2
17	215	(9.8)					2.2	(3.2)
18	225	9.5						3.1
19	235	9.0						2.9
20	245	7.5						2.9
21	255	7.1						2.7
22	252	6.5						2.7
23	250	(6.5)						(2.5)

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 37

Christchurch, New Zealand (43.5°S, 172.7°E) April 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	7.0					2.6	2.6
01	280	6.7					2.6	2.5
02	280	6.6					2.6	2.5
03	280	6.5					2.7	2.6
04	260	6.2					2.8	2.6
05	250	5.7					2.7	2.7
06	250	5.5				1.4	2.6	2.8
07	240	7.7				1.9	2.6	3.0
08	225	10.4				2.6		3.0
09	230	11.5				3.0		3.0
10	230	12.6				3.4		3.0
11	230	D	210			3.5		2.9
12	230	D	230			3.5		2.9
13	230	D				3.5		2.9
14	230	13.0				3.3		2.8
15	230	12.8				3.1		2.9
16	230	12.4				2.6		2.8
17	230	11.8				2.1		2.8
18	230	10.9				1.4	2.6	2.8
19	240	9.5					2.6	2.7
20	240	8.6					2.2	2.7
21	250	8.0					2.5	2.7
22	250	7.4					2.5	2.6
23	260	7.2					2.5	2.6

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.

Table 38

Bagneux, France (48.8°N, 2.3°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	245	7.8						
07	250	(8.4)						
08	240	9.3						
09	235	10.2	260	4.7				
10	235	D						
11	225	D	235					
12	230	D	225	5.3				
13	238	D						
14	240	D						
15	240	D						
16	250	(9.5)						
17	250	(9.3)						
18	250	(9.2)						
19	258	(8.3)						
20	270	(8.4)						
21	282	(6.5)						
22	290	(6.5)						
23								

Time: 0.0°.
Sweep: 4.0 Mc to 11.2 Mc in 12 minutes.

Table 39

Townsville, Australia (19.4°S, 146.5°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	250	10.1					2.1	2.8
01	250	9.0					2.1	2.9
02	250	8.5					2.2	2.9
03	250	8.0					2.2	2.7
04	268	7.4					2.3	2.7
05	252	7.5					2.1	2.7
06	265	8.0				1.4	2.2	2.8
07	240	10.0				2.6	2.6	3.1
08	235	12.0				3.2	3.4	(3.1)
09	240	(12.2)					(3.6)	
10	250	(12.0)					(5.4)	
11	250	D	200	5.9			(5.0)	
12	300	D	200				(5.9)	
13	325	D	215	7.2				
14	325	D	225	7.0			(4.1)	
15	318	12.5	225	7.0		(3.7)		
16	305	(12.0)	222		100	3.5	2.6	(2.6)
17	260	(11.2)			100	3.1	3.5	(2.7)
18	250	11.0				2.3	3.6	(2.8)
19	250	11.0					2.6	2.8
20	250	10.5					2.1	2.6
21	265	10.8					2.0	2.6
22	275	10.5					2.0	2.7
23	270	10.5					2.4	2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 40

Kermadec Is. (29.3°S, 177.9°W) January 1947*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	300	9.6	275	4.2	130	2.5	3.5	2.7
07	300	10.3	270	4.8	128	3.0	3.8	2.8
08	322	10.8	268	5.3	130	3.6	4.9	2.7
09	330	11.5	270	5.8	125	3.8	5.0	2.6
10	340	12.3	250	5.8	125	4.2	5.0	2.6
11	350	12.2	260	6.0	125	4.4	5.0	2.5
12	390	12.1	260	6.0	130	4.2		2.5
13	375	12.2	262	6.0	130	4.2	4.5	2.6
14	375	10.9	272	5.8	130	4.2	5.0	2.6
15	370	10.3	270	5.6	125	4.0	5.2	2.6
16	365	9.6	270	5.5	128	3.6	6.0	2.6
17	330	9.2	265	5.1	130	3.1	5.0	2.5
18	325	9.2	275	4.3	132	2.5	4.6	2.5
19	325	9.6	332	5.1			3.5	2.5
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.
*Observations taken from 0600 through 1900 only.

Table 41

Kermadec Is. (29.3°S, 177.9°W) December 1946*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	300	9.6	288	4.4	135	2.7		2.6
07	308	10.0	275	5.0	132	3.2	4.4	2.6
08	325	10.4	270	5.3	130	3.6	6.1	2.6
09	350	10.6	275	6.0	130	3.7	6.2	2.4
10	375	11.3	288	6.0	132	3.8	7.0	2.4
11	400	11.5	265	6.0	130		5.8	2.4
12	400	D	290	6.1	130	4.1	5.9	2.4
13	410	D	290	6.2	130	4.0	7.2	2.4
14	400	11.4	282	5.9	130		6.1	2.4
15	390	11.1	300	5.6	135	3.8	6.5	2.5
16	388	10.9	290	5.6	130	3.4	6.8	2.5
17	360	10.6	275	4.9	135	3.0	5.7	2.5
18	325	10.4				2.4	6.0	2.5
19	325	10.2					6.0	2.5
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.
*Observations taken from 0600 through 1900 only.

Table 42 (supersedes table 21, CRPL-F30)

Kermadec Is. (29.3°S, 177.9°W) November 1946*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	288	9.8			150	2.6		2.7
07	280	10.2	275	4.4	140	3.0		2.8
08	312	10.6	275	5.0	130	3.5	5.2	2.6
09	325	11.4	250	5.3	135	3.7	4.4	2.5
10	352	D	275	5.6	130	3.9		(2.5)
11	365	D	260	6.0	125	3.9		(2.4)
12	380	D	270	6.0	125	4.0	4.7	
13	375	D	285	6.0	130	4.0	4.7	(2.6)
14	365	D	290	5.8	130	3.8		2.5
15	350	11.5	280	5.6	132	3.6		2.6
16	332	11.2	290	5.0	135	3.4		2.5
17	325	10.9	300	4.7	150	2.9	3.6	2.5
18	312	10.8					3.8	2.6
19	310	10.4					3.5	2.5
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.
*Observations taken from 0600 through 1900 only.

Table 43 (supersedes table 31, CRPL-F30)

Kermadec Is. (29.3°S, 177.9°W) October 1946*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	285	7.8			150	2.4		2.9
07	300	10.0	275	4.4	150	2.8		2.9
08	300	10.4	275	4.4	140	3.2		2.9
09	310	10.9	272	4.8	130	3.5		2.8
10	310	11.2	270	5.0	130	3.6		2.7
11	325	11.5	252	5.0	130	3.6		2.7
12	325	11.5	270	5.0	130	3.6		2.7
13	325	11.2	270	5.0	125	3.7		2.7
14	325	11.0	275	5.0	130	3.6		2.7
15	325	10.6	275	4.8	130	3.4		2.7
16	322	10.5	285	4.5	140	3.0		2.7
17	300	10.4	290	3.8	150	2.5		2.7
18	300	9.8					2.8	2.7
19	300	9.4					2.4	2.6
20								
21								
22								
23								

Time: 180.0°E.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.
*Observations taken from 0600 through 1900 only.

Table 44*

Kermadec Is. (29.2°S, 177.9°W) December 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs**	F2-M3000
00		6.8					6.1	
01								
02								
03	280	5.6					6.2	
04							6.0	
05							5.0	
06	291	4.9	260	3.6			5.2	
07	309	6.1	250	3.7	126	2.7	6.3	
08	305	7.7	230	4.3	119	2.9	6.8	
09	296	7.6	242	4.4	118	3.1	8.0	
10	307	8.3	210	4.7	126	3.4	8.2	
11	329	8.1	223	4.6	119	3.4	8.8	
12	319	8.0	220	4.6	118	3.4	8.6	
13	338	7.6	217	4.6	120	3.6	8.0	
14	333	7.7	233	4.5	121	3.4	8.1	
15	311	8.2	238	4.4	119	3.3	6.8	
16	297	7.4	224	4.2	124	3.1	7.3	
17	302	7.1	239	4.0	123	2.9	7.0	
18	283	7.3	242	3.7			7.0	
19	280	7.4					7.5	
20	282	7.0					6.7	
21	300	6.9					5.4	
22								
23								

Time: Local.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.
*Average values.
**Abnormal E.

Table 45*

Ottawa, Canada (45.5°N, 75.8°W) November 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	353	2.8					3.2	
01	347	2.9					3.2	
02	340	2.8					3.3	
03							3.1	
04	334	2.7					3.3	
05	330	2.7					3.3	
06	326	2.8					3.6	
07	288	3.8	263	3.3	127	2.2	3.6	
08	276	4.8	252	3.4	133	2.3	4.0	
09	280	5.3	238	3.5	129	2.5	4.1	
10	297	5.6	229	3.8	127	2.8	4.1	
11	307	5.9	229	3.9	129	2.8	4.0	
12	307	6.1	235	4.3	124	2.8	4.2	
13	297	6.2	237	3.8	126	2.8	3.9	
14	294	6.1	243	3.6	133	2.6	3.7	
15	271	6.2	248	3.3	130	2.3	3.7	
16	261	5.8	242	3.5	120	2.2	4.2	
17	267	5.2	241	3.0	114	2.3	3.7	
18	274	4.2	249	2.8			3.3	
19	285	3.5					3.3	
20	286	3.2					3.4	
21	315	2.8					3.2	
22	344	2.7					3.0	
23	350	2.5					3.0	

Time: 75.0°W.
Sweep: 1.93 Mc to 13.5 Mc. Manual operation.
*Average values.

Table 46*

Kermadec Is. (29.2°S, 177.9°W) November 1943**

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260							
01								
02								
03	261							
04								
05								
06	242							
07	274				117	3.1		
08			221	4.3	114	3.2		
09			221	4.4	117	3.4		
10			200	4.5	116	3.5		
11			199	4.6	114	3.7		
12			198	4.6	114	3.7		
13			208	4.5	104	3.8		
14			208	4.5	112	3.7		
15			215	4.3	106	3.4		
16	283		228	4.0	109	3.2		
17			222	3.9	112	2.8		
18					135	3.1		
19								
20	248							
21	256							
22								
23								

Time: Local.
Sweep: 1.8 Mc to 12.0 Mc. Manual operation.
*Average values.
** 9th through 30th, only.

Table 47*

Churchill, Canada (58.8°N, 94.2°W) October 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00							6.0	
01							5.6	
02							5.0	
03							4.8	
04							4.5	
05							4.7	
06							4.5	
07	296	4.0					4.9	
08	271	3.9			114	3.1	5.0	
09	293	4.4	246	3.6	110	3.2	4.2	
10	341	4.4	228	3.6	125	2.9		
11	324	4.6	231	3.7	118	2.9		
12	345	4.7	226	3.8	122	2.8		
13	321	4.9	228	3.7	115	2.7		
14	328	4.9	244	3.6	128	2.8		
15	316	4.9	253	3.5	126	3.1		
16	290	4.8	250		122	3.1		
17	281	4.7			126	3.1	6.2	
18	301	4.4					5.9	
19	298	3.8					6.2	
20							6.9	
21	282	4.1					6.4	
22							6.3	
23							6.0	

Time: 90.0°W.
Sweep: 2.0 Mc to 16.0 Mc in 1 minute.
*Average values.

Table 48*

Ottawa, Canada (45.5°N, 75.8°W) October 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	326	2.7					3.2	
01	340	2.5					3.1	
02	360	2.4					3.3	
03							3.1	
04							3.3	
05	342	2.8					3.3	
06	326	3.7	274	2.8	117	2.0	3.6	
07	269	4.6	240	3.3	122	2.2	4.4	
08	273	5.1	226	3.6	120	2.5	4.8	
09	293	5.3	214	3.9	117	2.8	4.3	
10	303	5.4	207	4.1	116	2.9	4.6	
11	318	5.6	216	4.1	117	2.8	4.7	
12	310	5.7	208	4.1	115	2.9	4.1	
13	310	5.8	213	4.1	113	2.8	4.4	
14	298	5.8	223	3.9	116	2.7	3.9	
15	296	5.6	227	3.6	119	2.5	4.3	
16	285	5.8	245	3.3	121	2.4	3.7	
17	260	5.7	241	3.1	124	2.1	4.0	
18	273	5.1			129	2.1	4.1	
19	277	4.4					3.1	
20	284	3.6					3.0	
21	307	3.1					2.8	
22	325	2.9					3.1	
23	333	2.6					3.3	

Time: 75.0°W.
Sweep: 1.93 Mc to 13.5 Mc. Manual operation.
*Average values.

Table 49*

Churchill, Canada (58.8°N, 94.2°W) September 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00							6.0	
01							5.1	
02							5.0	
03							4.9	
04							4.6	
05					124	2.9	4.5	
06							4.8	
07							4.8	
08					108	2.9	4.4	
09	413	4.2	246	3.6	108	3.0	4.2	
10	443	4.2	239	3.8	112	2.9		
11	404	4.3	232	3.8	120	3.0	3.8	
12	406	4.5	220	3.8	116	3.0		
13	401	4.5	226	3.8	112	3.0		
14	380	4.7	223	3.8	118	2.9		
15	358	4.8	232	3.7	116	2.9		
16	347	4.7	246	3.6	121	2.9		
17	322	4.6	243	3.5	119	2.9	6.0	
18	320	4.2			119	3.0	5.3	
19	310	3.7			120	3.0	6.4	
20	312	3.6			120	3.2	6.2	
21							6.6	
22							6.1	
23							6.3	

Time: 90.0°W.
Sweep: 2.0 Mc to 16.0 Mc in 1 minute.
*Average values.

Table 50*

Ottawa, Canada (45.5°N, 75.8°W) September 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	367	2.5					2.8	
01	348	2.7					2.7	
02							2.7	
03							2.8	
04	333	2.9					3.0	
05			252	2.5			3.4	
06	283	3.6	261	3.1	124	1.9	4.1	
07	284	4.3	237	3.5	124	2.1	4.1	
08	307	4.8	223	3.8	114	2.6	3.9	
09	342	5.0	214	4.0	112	3.0	4.0	
10	346	5.1	208	4.1	110	3.0	4.1	
11	346	5.4	206	4.1	112	3.1	3.8	
12	349	5.4	206	4.1	112	3.1	3.9	
13	347	5.2	214	4.1	111	3.0	3.7	
14	346	5.3	220	4.0	111	2.9	3.8	
15	336	5.2	223	4.0	111	2.7	5.0	
16	318	5.2	232	3.8	119	2.4	4.2	
17	306	5.1	244	3.4	126	2.0	3.5	
18	282	5.1	250	3.2			3.2	
19	287	4.6	255	3.0			3.6	
20	288	3.9					3.2	
21	310	3.1					3.2	
22	298	2.7					4.2	
23	350	2.7					4.2	

Time: 75.0°W.
Sweep: 1.93 Mc to 13.5 Mc. Manual operation.
*Average values.

Table 51*

Christchurch, New Zealand (43.5°S, 172.7°E) September 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs**	F2-M3000
00		2.7					3.4	
01		2.5					3.9	
02		2.6					3.9	
03		2.4					5.6	
04		2.3					3.0	
05		2.2					5.1	
06	245	2.8					3.6	
07	225	3.5					3.2	
08	241	4.0	215	3.3			3.7	
09	266	4.4	201	3.6	140	2.9	4.1	
10	299	4.9	205	3.8	109	2.9	3.8	
11	305	5.2	217	4.0	107	2.9	3.3	
12	326	5.3	215	4.0	110	3.0	6.5	
13	330	5.2	217	3.8	115	2.9	5.8	
14	309	5.3	214	3.8	109	2.8	6.0	
15	304	5.1	219	3.8	117	2.8	7.2	
16	274	5.0	224	3.4		2.8	4.5	
17	249	4.7	238	2.9			2.6	
18	246	4.3						
19	271	3.8					3.0	
20	274	3.4					2.9	
21	255	3.3					3.7	
22	300	3.0					3.3	
23		2.6					3.2	

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.
*Average values.
**Abnormal E.

Table 52*

Churchill, Canada (58.3°N, 94.2°W) August 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	284	3.4					5.8	
01	(275)	(3.4)					6.0	
02	(305)	(3.9)					5.7	
03	306	3.6					4.9	
04	322	3.5			(130)	(3.0)	4.9	
05	315	3.7			113	3.1	4.8	
06	(317)	(3.3)			107	2.9	5.1	
07	(245)	(3.9)			105	3.1	4.7	
08	347	4.4	235	3.7	105	3.3	4.8	
09	357	(4.8)	240	4.0	103	3.0	4.5	
10	405	4.7	230	4.0	106	3.1	4.9	
11	404	4.9	219	4.0	103	3.0	4.3	
12	430	4.9	218	4.0	108	3.0	4.4	
13	396	4.9	215	4.0	109	3.0	(4.3)	
14	376	5.0	222	4.0	103	3.1	5.1	
15	391	5.3	224	4.0	106	3.0	4.0	
16	369	4.9	219	3.9	111	2.9	5.2	
17	339	4.9	240	3.6	113	2.9	5.4	
18	323	4.7	249	3.4	117	2.8	6.3	
19	304	4.3	(262)	(3.3)	112	3.0	6.4	
20	283	4.0			(125)	(3.4)	6.3	
21	301	4.0					6.4	
22	299	4.0					6.5	
23	306	3.6					6.6	

Time: 94.0°W.
Sweep: 2.0 Mc to 16.0 Mc in 1 minute.
*Average values.

Table 53*

Ottawa, Canada (45.5°N, 75.8°W) August 1943

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	322	2.9					3.9	
01	(306)	(3.1)					4.1	
02	(335)	(2.9)					3.8	
03	(345)	(2.8)					3.3	
04	(340)	(3.0)					3.2	
05	(280)	(3.2)	281	2.7	(119)	(2.1)	3.6	
06	276	3.8	248	3.2	121	2.1	(3.4)	
07	(274)	4.4	230	3.6	114	2.4	3.8	
08	(320)	(4.7)	215	3.9	114	2.9	3.9	
09	362	4.7	203	4.0	109	2.9	4.1	
10	(387)	(5.0)	199	4.1	110	3.1	4.1	
11	374	5.1	197	4.2	111	3.2	4.4	
12	365	5.0	198	4.2	106	3.3	4.1	
13	386	4.9	209	4.2	109	3.2	4.1	
14	383	4.9	209	4.2	109	3.2	4.3	
15	383	4.8	212	4.1	108	3.0	4.3	
16	366	4.9	217	3.9	112	2.8	3.7	
17	328	5.0	223	3.6	116	2.5	(3.6)	
18	294	5.0	240	3.3	126	2.3	5.3	
19	284	4.7	237	(2.9)	(130)	(2.6)	(4.6)	
20	293	4.2	(248)	(3.3)			4.7	
21	307	3.5	(270)	(2.9)			3.8	
22	308	3.3					4.3	
23	337	3.0					3.4	

Time: 75.0°W.
Sweep: 1.93 Mc to 13.5 Mc. Manual operation.
*Average values.

Table 54*

Christchurch, New Zealand (43.5°S, 172.7°E) August 1943

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs**	F2-M3000
00	327	2.6					4.2	
01	292	2.7					3.6	
02	313	2.6					4.2	
03	298	2.8					3.0	
04	267	2.6					4.6	
05	260	2.6					3.6	
06		2.4					4.4	
07	269	3.2					3.6	
08	243	4.0	220	2.7			4.4	
09	241	4.4	210	3.3			3.5	
10	298	4.6	219	3.6	98	2.9	5.3	
11	308	5.1	228	3.8	112	2.9	4.4	
12	294	5.4	217	3.9	110	3.0	3.8	
13	285	5.3	222	3.9	109	2.8	5.4	
14	277	5.1	212	3.7	118	2.7	5.5	
15	274	5.1	220	3.5	95	2.7	3.8	
16	260	4.9	234	3.2			2.7	
17	245	4.4					4.3	
18	268	3.9					3.4	
19	282	3.7					3.6	
20	293	3.0					4.0	
21	290	2.9					4.5	
22	325	2.8					4.1	
23	305	2.7					4.7	

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.
*Average values.
**Abnormal E.

Table 55*

Ottawa, Canada (45.5°N, 75.8°W) July 1943

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	325	2.9					4.5	
01	331	3.1					4.2	
02	331	2.9					3.5	
03	332	2.8					3.5	
04	333	2.9					3.4	
05	317	3.8	256	3.0	125	2.3	3.8	
06	286	4.3	226	3.4	121	2.4	4.0	
07	297	4.5	217	3.7	115	2.7	4.0	
08	309	4.7	215	4.0	113	3.0	4.1	
09	362	4.8	208	4.1	110	3.0	4.3	
10	365	4.9	208	4.2	111	3.1	4.4	
11	382	4.9	203	4.3	106	3.1	4.4	
12	369	5.0	204	4.3	108	3.2	4.5	
13	385	4.9	206	4.3	110	3.3	4.8	
14	379	5.0	213	4.2	111	3.3	4.3	
15	396	4.9	214	4.2	115	3.1	4.3	
16	385	4.8	224	4.0	115	2.9	4.5	
17	364	4.9	221	3.9	116	2.7	4.3	
18	334	4.9	236	3.5	119	2.5	4.6	
19	295	4.8	242	3.1	146	2.4	4.4	
20	294	4.8	248	3.2	138	2.3	4.6	
21	294	4.4	266	2.9			4.1	
22	302	3.7					4.2	
23	310	3.2					4.1	

Time: 75.0°W.
Sweep: 1.93 Mc to 13.5 Mc. Manual operation.
*Average values.

Table 56*

Christchurch, N.Z. (43.5°S, 172.7°E) July 1943

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	270	3.4						
01	320	3.7						
02		3.2						
03	360	2.9						
04	370							
05	330	2.5						
06								
07	250	3.3						
08	232	3.6						
09	233	4.0						
10	260	4.4						
11	289	4.9						
12	267	4.8						
13	273	4.9						
14	251	5.3						
15	238	5.1						
16	227	4.5						
17	224	3.8						
18	250	3.5						
19	245	3.2						
20	260	3.0						
21	295	3.0						
22	284	3.4						
23	308	3.4						

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.
*Average values.

Table 57*

Ottawa, Canada (45.5°N, 75.8°W) June 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	296	3.4					4.4	
01	303	3.0					4.3	
02	313	2.7					4.2	
03	323	2.5					3.6	
04	304	2.7					3.6	
05	263	3.7	254	3.1	115	2.5	4.3	
06	248	4.1	224	3.5	117	2.7	4.1	
07	295	4.5	227	3.7	116	2.9	4.6	
08	321	4.8	205	4.1	110	3.0	4.6	
09	351	5.2	203	4.2	108	3.0	4.7	
10	411	5.0	200	4.3	107	3.1	5.0	
11	409	4.9	196	4.3	105	3.1	5.1	
12	372	5.1	195	4.3	109	3.1	4.7	
13	374	5.0	198	4.4	108	3.1	4.8	
14	412	4.9	204	4.3	109	3.1	4.8	
15	393	4.9	207	4.2	112	3.1	4.3	
16	364	5.1	206	4.0	112	2.9	4.2	
17	320	5.1	218	3.9	114	2.7	4.4	
18	304	5.2	233	3.7	121	2.7	4.1	
19	276	5.2			129	2.4	4.5	
20	267	5.1			135		3.8	
21	273	4.6					4.3	
22	290	4.2					4.8	
23	297	3.6					4.4	

Time: 75.0°W.
Sweep: 1.93 Mc to 13.5 Mc. Manual operation.
*Average values.

Table 58*

Ottawa, Canada (45.5°N, 75.8°W) May 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	325	2.8					3.6	
01	361	2.9					3.6	
02	(380)	(3.3)					3.8	
03	(336)	(3.1)			(120)	(2.6)	3.4	
04	321	2.6			(127)	(2.4)	4.0	
05	283	3.6	247	3.3	126	2.4	3.0	
06	292	4.0	253	3.3	122	2.6	3.9	
07	302	4.4	244	3.7	126	2.8	3.8	
08	327	5.0	229	4.0	123	3.0	4.0	
09	348	5.0	220	4.1	117	3.1	4.3	
10	364	5.1	212	4.3	118	3.1	5.1	
11	410	5.3	215	4.4	119	3.2	4.4	
12	416	5.3	210	4.4	116	3.2	4.3	
13	389	5.3	218	4.3	123	3.2	4.0	
14	382	5.2	228	4.4	120	3.3	4.2	
15	368	5.2	231	4.2	122	3.1	4.0	
16	385	5.1	240	4.1	121	3.0	4.3	
17	346	5.2	249	3.8	122	2.5	4.6	
18	310	5.4	254	3.5	131	2.4	4.3	
19	294	5.3	255	3.4	(132)	(2.6)	4.2	
20	285	5.0		2.9	(126)	(2.9)	4.4	
21	293	4.5			(130)	(3.0)	4.1	
22	301	3.8					3.9	
23	313	3.2					3.9	

Time: 75.0°W.
Sweep: 1.93 Mc to 13.5 Mc. Manual operation.
*Average values.

Form adopted June 1946

TABLE 59

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

h'F2 (Characteristic), km (Unit), July (Month), 19 47

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A. H. S.

Calculated by: A. H. S.,

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	(460)	[460]C	(490)	C	C	(490)	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	450	480	C	C	C	530	C	C	C	340	[240]H	270	270	C	C
3	240	270	280	260	[270]C	[250]C	240	[240]C	250	300	320	330	360	370	380	360	390	380	(270)	240	240	250	270	250
4	240	250	240	230	250	260	240	310	350	350	350	390	400	[390]C	(380)H	(440)	430	370	340	A	A	270	280	270
5	270	240	250	250	250	250	240	220	270	(320)	310	380	350	380	370	380	340	310	250	240	250	240	260	270
6	270	270	280	A	270	280	270	280	320	370	[370]C	430	390	430	400	380	C	C	C	240	250	A	250	230
7	240	270	270	290	290	270	250	380	400	360	350	400	400	390	380	430	390	340	(350)	260	240	230	230	240
8	270	280	300	280	270	270	270	320H	[320]C	360	330	370	430	420	420	400	400	330	320	220	240	[240]C	[270]A	260
9	280	290	300	280	270	280	300	350	450	[360]C	310H	360	300H	380	380	390	360	350	270	[250]C	230	[260]A	270	260
10	270	250	250	240	270	220	(240)	330	330	470	370	440	490	440	(420)	[420]C	(420)	[380]C	340	(250)A	(250)A	C	A	A
11	(300)A	280	320	290	270	(300)A	(230)A	310	550	(580)	560	420	460	520	330	460	420	390	330	250	250	270	(270)A	280
12	290	270	270	250	250	290	C	C	(400)	(440)	410	(570)	530	(590)	550	450	430	(430)	(350)	[280]A	270	250	250	250
13	270	250	260	(300)A	(280)A	240	230	330	(430)	420	[450]A	(490)	500	500	450	(490)	470	400	(350)	250	250	300	300A	240
14	280	250	240	250	250	270	230	(320)	320	(370)	360	430	410	430	440	(450)	370	350	320	270	260	(230)	270	300
15	(300)	300	290	270	260	270	410	360	340	(420)	420	430	470	500	480	480	470	390	380	C	C	C	C	C
16	C	C	C	C	C	C	C	C	400	380	380	340	340	430	430	430	430	340	300	260	240	240A	250	260
17	260	240	250	250	260	280	250A	240	220	340	390	410	380	400	480	480	460	430K	380K	320K	260K	220K	270K	(310)AK
18	(270)AK	(320)AK	(300)AK	(300)AK	(330)AK	310K	AK	AK	GK	AK	GK	AK	AK	AK	AK	GK	730K	600K	430K	340K	270K	320K	300K	300K
19	340K	270K	340K	320K	300K	300FK	500FK	600FK	700K	GK	GK	GK	AK	GK	630K	540K	[570]AK	430K	380K	270K	270K	260FK	280K	300K
20	270K	280K	270K	280K	300K	300K	260K	[630]SK	GK	GK	GK	GK	GK	GK	GK	AK	AK	530K	390K	(280)A	280FA	280	300	250
21	250	280	250	290F	300F	300F	240F	470	500K	580FK	(730)K	C	GK	640K	650K	630K	(500)FK	430FK	380K	260K	260K	260	260	280
22	250	270	270	290	300	290	250	400	300	370	(400)C	(420)C	(460)C	460	430	430	450	370	340	260	260	(300)	(280)A	(280)A
23	270	280	280	270	290	300	(490)FS	430F	370	430	(480)B	430	570	520	620	520	460F	440	(360)	250F	270	280F	280	280
24	330	300	250	280	250	260	240	240	(370)	320	390	380	470	450	(430)C	[440]A	430	420	320	260	270	280F	280F	290FS
25	250	250	280	280	(320)A	330	(390)S	420K	(370)C	GK	490K	GK	GK	490K	470	[450]C	(430)C	C	C	(280)C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	380	380	(280)A	280	280K	[250]CK	300K	(300)AK
27	(300)K	280K	300K	300K	300K	270K	240K	550K	GK	680K	GK	(640)EK	CK	CK	GK	520K	450K	320	(300)A	(270)A	270	280	(300)A	(320)A
28	(280)K	(280)C	(290)C	(280)AC	(280)C	250F	230F	350	430	(360)C	(430)C	420	(550)C	480	480	(400)C	[430]C	350	330	250	220	(250)A	(290)A	(300)A
29	280	280	270	240	280	270	240	250	[260]A	270	310	370	380	380	370	380	340	330	240	250	240A	250F	270	(280)A
30	[290]A	[310]A	(330)A	300	(280)A	[260]A	250	260	(240)C	(340)SC	(330)SC	380	390	400	370	360	380	320	280	230	220	(300)A	(300)A	(290)A
31	(280)A	250	260	250	250	240	(250)A	[260]A	330	290	[330]B	C	(B)C	C	C	C	C	(300)C	(230)C	(200)C	(250)C	(300)C	C	C
Median	270	270	270	280	270	270	250	330	370	370	395	420	460	440	430	440	430	380	335	255	250	260	270	280
Count	27	27	27	26	27	27	25	25	28	28	30	26	25	25	27	27	26	27	28	28	27	26	25	25

Sweep 1.0 Mc to 25.0 Mc in 2.25 min

Manual ☐ Automatic ☒

TABLE 60

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A. H. S.

Calculated by: A. H. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	7.0	[7.0]C	(6.9)J	C	C	(6.8)J	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	(5.9)	(6.3)	C	C	C	(6.5)	C	C	C	6.4	6.0	6.0	6.6	C	C
3	6.5	(5.0)	C	C	C	C	6.0	[7.0]C	8.0	[8.2]C	(8.3)	(8.4)	(8.4)	8.0	8.0	8.2	8.0	7.9	8.0	[7.8]C	7.8	(7.2)J	7.2	(7.1)J
4	(6.5)	6.3	5.8	5.2	5.1	5.3	6.4	6.8	7.1	7.0	(7.2)J	(7.1)J	7.0	[6.6]C	(6.3)	6.4	(6.3)	6.4	6.3	6.3	6.5	6.8	6.4	6.6
5	6.5	5.9	5.5	5.0	4.9	5.3	6.5	7.0	7.2	7.9	(8.0)	8.2	8.2	7.7	7.8	7.4	7.0	7.5	7.8	7.2	7.2	7.4	(7.0)	7.2
6	7.0	6.8	6.3	6.3	5.5	5.2	5.8	5.9	6.6	(6.6)	[6.7]C	(7.0)J	(7.1)J	7.0	7.0	6.9	C	C	C	7.1	7.3	7.4	(7.0)	6.5
7	6.4	5.5	5.3	5.0	4.8	4.7	5.2	5.5	6.1	6.4	(6.3)	6.7	(7.0)	6.8	6.8	6.8	7.0	7.0	7.1	7.3	(8.0)	7.0	(6.6)	6.3
8	(5.8)	(5.2)J	5.5	5.5	5.3	5.3	5.3F	5.2	[6.5]C	7.6	(7.2)	(7.5)	7.4	7.6	7.3	7.5	7.4	7.6	8.0	8.0	7.4	(7.6)	(7.3)	6.6
9	6.5	5.8	(5.5)J	5.4	4.9	5.0	5.8	6.2	6.7	[7.5]C	(8.0)J	(8.0)J	8.0	8.2	8.6	8.1	8.5	8.6	8.2	[8.2]C	8.4	(7.8)J	7.8	7.6
10	(7.4)	7.0	6.5	5.5	(4.8)	4.5F	5.5	(6.2)J	7.2	7.0	(7.0)	6.8	7.0	7.2	(7.6)	[7.5]C	(7.4)	[7.4]C	(7.4)	7.3	7.5	[7.5]C	(7.6)	(6.5)
11	6.1	6.0	5.5	5.2	(5.0)	5.2	5.7	(6.0)	(6.1)	(6.3)S	(6.6)	6.9	6.9	(6.8)	7.1	(7.2)	(6.5)	(7.3)	7.8	[7.7]C	7.2	7.8	(7.4)	6.4
12	(6.2)J	5.8	5.7	5.4	(4.5)	4.7	C	C	(6.8)	(6.8)	(7.0)	(6.4)	6.5	(6.6)	(6.6)	6.8	6.8	(7.0)	7.0	7.0	(6.9)	7.4	(7.4)	7.1
13	6.7	6.0	(5.8)J	(5.8)J	(5.2)F	5.3	6.0	6.7	(6.8)	(6.9)	[6.9]A	(6.7)	7.0	7.0	(7.2)	7.0	7.1	7.0	7.2	7.2	7.1	(7.4)	7.4	7.4
14	7.0	6.8	6.1	5.4	5.2	5.5	(7.0)	(7.8)	8.2	7.8	7.9	(7.8)	7.9	(8.0)	(7.8)J	(7.6)	(8.0)	7.8	(8.0)	(8.4)	(8.0)	(7.9)	(7.0)	7.0
15	(7.3)	7.1	7.0	(6.9)	6.2	(5.8)J	(6.2)	(6.9)	7.2	(7.2)	7.3	(7.3)	(7.2)	7.1	7.1	6.9	7.0	6.9	7.0	C	C	C	C	C
16	C	C	C	C	C	C	C	C	7.6	7.6	(8.0)	(7.8)	7.6	7.8	8.0	7.8	7.7	7.6	(7.6)	(7.6)	(7.8)	(7.4)	(7.6)	(7.6)
17	(7.0)	6.2	6.0	(5.7)J	5.6	5.7	7.2	(8.0)	(8.4)S	(8.4)S	(9.2)J	(8.6)S	(9.2)S	9.0	(8.3)	(8.3)	(8.8)	(9.2)SK	(9.5)SK	(9.6)SK	[10.3]SK	(8.8)JSK	(9.0)SK	(8.1)JSK
18	(7.4)SK	(6.6)JK	(5.9)K	(5.6)JK	(5.0)FK	(4.3)JSK	A K	A K	<4.7FGK	A K	<(5.2)GK	A K	A K	A K	A K	<5.1FGK	5.3K	5.3K	5.4FK	5.9K	5.4K	(5.7)JK	5.8K	5.4K
19	(5.5)K	5.6K	(4.2)JK	(3.0)FK	(3.0)FK	(3.8)FK	(4.3)FK	4.9FK	4.7K	<5.0GK	<5.2GK	<5.3GHK	A K	<6.3GK	5.9K	6.0K	[6.0]AK	6.3K	6.3K	6.5K	6.4K	6.8K	(7.0)K	(6.6)K
20	(6.3)FK	(6.0)K	(5.5)FK	(4.2)FK	4.2K	4.6K	(5.2)FK	[4.8]FK	<4.8FK	<4.9GK	<(5.1)GK	<5.2GK	<5.5GHK	<5.4GK	<(5.3)GK	A K	A K	5.9K	6.0K	6.0	(6.3)S	(7.0)J	(7.1)	(6.4)
21	(6.4)	(6.5)F	(5.6)JS	(5.4)FS	(5.0)FS	(4.6)FS	5.0F	5.5F	5.8FK	5.4FK	5.7K	C K	<5.4GHK	5.8FK	(5.9)JK	6.0K	6.1K	(6.2)FSK	(6.2)FSK	(6.4)K	(6.6)FSK	(7.3)S	(7.1)S	(6.8)S
22	(6.8)S	6.2	(5.4)F	(5.4)S	(4.9)FS	(4.9)FS	6.0	(7.2)S	(7.9)S	(8.0)C	C	C	(7.6)C	7.7	8.0	(8.0)S	7.8	7.9	7.8	8.0	(8.4)S	(8.8)JS	(8.2)S	(8.0)S
23	(7.6)S	7.4	6.8	6.0	(5.7)S	5.4	(5.2)F	5.6F	6.6	7.4	B	(7.5)	6.8	6.8	6.4	6.7	(6.4)FS	6.8	7.0	6.8	(6.8)FS	(7.1)	(6.9)J	6.8
24	(6.1)J	(6.0)J	(5.9)J	(5.7)JS	5.4	5.6	6.6	7.2	(7.7)	(8.4)S	(8.5)	(8.6)	7.9	7.8	(7.4)C	[7.4]A	7.2	7.0	7.4	7.3	(7.1)SC	(7.2)SC	(7.0)SC	(6.9)SC
25	(7.0)SC	6.6	6.3	(5.7)JS	(5.4)S	(4.7)JS	5.4	5.9K	5.5K	<(5.5)	6.6K	<5.4GK	<5.7GK	6.7K	6.9	[7.0]C	(7.1)C	(6.8)C	(6.8)C	(7.2)C	(6.9)C	(7.3)C	(7.2)C	[7.0]C
26	(6.9)C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(6.8)	(6.8)	(6.7)	(7.1)S	(7.0)JK	[6.6]JK	(6.5)K	(6.6)JGK
27	(6.0)JGK	(5.9)K	(5.2)FK	(4.8)K	(5.0)K	4.8K	4.9K	5.0K	<4.9GK	5.4K	<(4.9)GK	5.8K	C K	C K	<5.0GK	(5.9)CK	6.0K	(6.5)	(6.5)J	(6.4)	(7.0)J	(6.5)	(6.4)C	(6.6)C
28	(6.2)JC	(5.6)SC	(5.1)FC	(4.8)FC	(4.6)FC	(4.8)F	(5.4)FC	(6.2)F	(6.6)S	(6.8)FC	(6.8)FC	6.8	6.5	(6.6)S	6.5	(6.8)CJ	[6.9]C	(6.8)	7.0	7.2	7.0	(6.8)S	(7.0)E	(6.6)S
29	(6.7)JS	6.4	(6.2)J	(5.8)J	(5.6)S	(5.0)S	5.7	(6.2)S	(6.5)A	6.8	7.4	7.7	(7.5)S	7.8	(7.7)FS	7.8	7.6	7.7	7.9	7.8	7.7	(7.5)JS	(7.2)S	(6.5)S
30	6.4	[6.1]A	(5.8)	(5.6)JS	(5.4)S	(5.0)S	(6.2)	(7.4)S	(6.8)SC	(7.6)SC	(7.9)SC	8.0	8.0	8.0	8.2	(8.0)	(8.0)	7.8	7.9	8.0	(7.5)S	(7.7)JC	(7.7)JS	7.6
31	(7.0)JC	7.0	6.5	6.2	(6.2)C	(5.9)JC	(6.5)C	[7.2]A	7.7	(8.3)	8.6	C	(B)C	C	[7.9]C	(8.1)JC	[8.1]C	(8.2)C	(8.0)C	(7.8)C	(7.6)C	(7.7)C	C	C
Median	(6.5)	6.1	5.8	(5.4)	(5.0)	5.0	5.8	6.2	6.8	(7.0)	(7.0)	(7.1)	7.1	7.1	7.2	7.1	7.1	7.0	7.2	7.2	(7.2)	(7.4)	(7.1)	(6.8)
Count	28	27	26	26	26	26	25	25	28	28	28	25	25	25	28	28	27	28	29	29	29	29	27	27

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 61

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat. 39.0° N, Long. 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A. H. S.

Calculated by: A. H. S.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	C	C	C	C	C	C	C	C	C	7.0	7.0	7.0	C	C	C	C	6.7	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	(5.6)	5.9	6.3	C	C	C	C	C	C	C	C	6.3	6.0	[6.3]^C	[6.4]^C	C	C
3	[5.8]^C	C	C	C	C	C	[6.5]^C	[7.5]^C	C	C	(8.0)	(8.4)	[8.2]^C	(8.0)	8.0	8.1	7.9	8.0	[8.0]^C	[7.8]^C	7.3	(7.2)^J	(7.1)	(6.9)^J
4	6.5	6.2	5.6	(5.2)^J	5.0	5.8	6.6	(6.2)	(7.0)^J	[7.2]^C_J	(7.1)^J	(7.0)^J	6.8	[6.5]^C	6.4	(6.4)^J	6.6	6.4	6.4	A	(6.6)	(6.6)	6.4	6.7
5	6.0	5.8	5.3	5.0	4.8	5.8	6.6	(7.2)	7.9	8.0	8.3	8.2	7.9	7.5	7.5	7.3	(7.4)	7.8	7.8	7.2	7.6	7.2	(7.2)	7.0
6	6.8	6.6	6.2	5.9	5.2	5.8	5.8	6.2	6.6	[6.7]^C	(6.8)	(6.8)	(7.0)	7.0	7.0	C	C	C	(7.1)	7.1	7.6	(7.7)	6.9	6.2
7	5.8	5.5	5.0	4.9	4.8	4.9	5.3	5.8	[6.2]^C	[6.5]^C	6.5	6.8	7.0	(6.7)	(6.8)	7.0	(7.0)	7.0	7.4	(7.8)	(7.7)^J	6.8	6.5	[6.0]^C
8	5.6	(5.3)	5.4	5.4	5.3	5.3	5.5	C	[7.0]^C	[7.6]^C	7.8	7.4	7.3	7.6	7.2	7.5	7.6	7.5	7.8	7.8	7.7	7.6	7.3	6.5
9	6.0	5.7	5.4	(5.2)	4.8	5.3	6.0	6.6	7.6	7.6	(8.0)	(8.0)	(7.8)^J	8.5	(8.0)	8.4	8.6	8.8	8.4	(7.6)	(7.8)	(7.4)	(7.7)	(7.4)
10	7.2	7.0	5.9	5.2	4.6	4.9	5.8	6.4	[7.2]^C	[7.0]^C	[7.0]^C	7.0	(7.0)	7.6	[7.5]^C	7.2	7.4	(7.4)^A	7.3	(7.3)	(7.6)	7.5	(7.0)	(6.6)
11	6.2	(5.7)	5.4	5.0	5.0	5.7^U	5.8	(6.0)	[6.2]^C	(6.8)	(6.6)^S	G	(6.8)	(7.1)^J	7.2	(7.0)	(7.0)	(7.6)	7.8	(7.4)	(7.4)	(7.8)	7.0	6.2
12	6.1	(6.0)^J	5.6	5.0	4.2	C	C	C	(6.7)	(7.0)	(6.6)	(6.4)	(6.6)	(6.8)	(6.7)	[6.8]^C	(6.8)	(7.0)	(7.0)	7.0	7.6	7.6	7.3	7.0
13	6.5	5.9	(5.6)	5.5	5.0	5.9	6.5	6.8	[6.8]^A	7.0	[6.9]^A	6.9	7.0	7.1	7.0	6.9	7.0	7.2	7.2	6.9	7.1	[7.4]^A	7.5	7.1
14	6.9	6.4	5.8	(5.4)	5.3	(6.2)^J	[7.4]^C	(8.0)	7.8	(7.8)	7.7	(7.8)	8.0	7.9	(7.8)	(8.0)	8.0	(8.0)	8.0	(8.4)	(8.0)	(7.1)	7.0	7.3
15	(7.0)	7.0	7.0	6.5	6.0	(5.9)	(6.5)^F	7.1	(7.0)	(7.0)	(7.3)	[7.2]^C	7.2	7.2	6.9	7.0	7.0	(6.9)	(7.1)	C	C	C	C	C
16	C	C	C	C	C	C	C	C	7.7	8.0	8.0	7.9	7.8	8.0	(7.8)	7.7	7.6	(7.3)	7.6	(7.7)	(7.6)	(7.6)	(7.6)	7.4
17	6.6	6.1	6.0	5.7	5.6	6.5	7.8	[8.3]^S	(8.4)	(8.8)	(8.5)^S	9.0	8.9	(9.2)	(9.2)^S	8.0	[9.0]^C	(9.5)^S_K	[9.6]^S_K	(11.1)^J_SK	(9.5)^S_K	(9.0)^S_K	(9.0)^S_K	(8.1)^S_K
18	(7.2)^S_K	(6.1)^J_K	(5.2)^S_K	(5.1)^S_FK	(4.1)^S_JK	(4.2)^S_K	A^K	A^K	A^K	G^K	A^K	A^K	A^K	A^K	G^K	G^K	5.3^K	5.4^K	5.5^K	5.5^K	(5.2)^K	(5.9)^K	(5.3)^K	(5.4)^K
19	5.7^K	4.7^F_K	(3.8)^F_K	(3.6)^F_K	(3.8)^F_K	(4.2)^F_K	4.8^F_K	G^K	(5.1)^F_K	G^K	G^K	G^K	A^K	G^K	(6.8)^J_K	6.2^K	6.0^K	6.4^K	(6.2)^J_SK	(6.2)^S_K	[6.7]^C_K	[6.6]^S_FK	[6.7]^C_K	(6.6)^K
20	6.0^K	(5.5)^F_K	(4.9)^F_K	(4.2)^S_FK	(4.4)^J_K	4.7^K	(5.2)^K	(5.3)^F_K	G^K	G^K	G^K	G^K	G^K	G^K	A^K	5.8^K	A^K	6.1^K	(6.2)^S_K	6.3	[6.5]^C	7.2	7.0	(6.6)^J
21	[6.6]^C_F	(5.8)^F	(5.0)^F_S	(5.4)^F_S	(4.6)^F_S	5.0^F	5.4^F	5.5^F	5.9^F_K	G^K	[5.8]^C_K	C^K	G^K	G^K	G^K	6.2^S_K	(6.2)^S_K	6.2^F_K	(6.4)^S_K	(6.5)^S_K	(6.0)^F_SK	(7.2)^S	(6.8)^S	(6.9)^S
22	6.3^F	(5.7)^F	5.4	(4.9)^S	(4.7)^F_S	(5.6)^F_S	(6.4)^S	(7.9)^S	(7.8)^C	(8.0)^C	C	(7.8)^C	(7.7)^C	7.7	8.4	8.0	7.8	8.0	7.8	8.2	(8.3)^S	(8.3)^J	(8.0)^S	[8.1]^J_S
23	7.8	7.0	6.2	5.9	(5.4)^S	(5.5)^F	6.3^F	[6.0]^C_F	(7.4)^S	(7.3)	(7.1)^B	(7.0)^C	6.8	(6.5)^C_S	6.6	(6.4)^J_S	(6.3)^S	6.8	(6.8)^S_F	6.6	(6.9)^S	7.0	6.9	6.5
24	6.0	6.2	5.5	(5.6)^J_S	(5.4)^S	(5.8)^S	7.2	(7.2)^S	(8.2)^J	8.5	8.7	8.3	7.8	7.5	7.5	7.2	7.0	7.1	7.3	7.2	(7.0)^S_C	(7.2)^S_C	(7.0)^S_C	(6.9)^S_C
25	(6.8)^S_C	6.5	6.2	(5.5)^S_C	(4.8)^S	5.0	(5.6)^S	5.9^K	(6.2)^S_K	(5.7)^F_K	(6.5)^C_K	G^K	(7.0)^K	6.6^K	C	C	(6.9)^C	(6.8)^C	(6.8)^C	C	C	C	C	(6.9)^C
26	C	C	C	C	• C	C	C	C	C	C	C	C	C	C	C	C	(6.5)	6.8	(6.9)^J_C	(7.0)^J_C	(7.0)^J_SK	[6.3]^C_K	(6.6)^J_CK	6.0^K
27	(6.0)^K	(5.2)^K	(5.1)^C_K	(4.8)^F_K	4.8^K	5.0^K	4.8^K	5.4^K	(5.4)^K	G^K	5.8^K	C^K	C^K	C^K	(6.2)^C_K	(5.9)^K	(6.0)^C_K	(6.4)^K	[6.5]^A	(6.5)^J	(7.0)^J	(7.0)^J_C	[6.4]^C	[6.5]^A	(6.6)^C
28	(6.0)^C	(5.5)^F_C	(5.0)^F_C	(4.6)^F_C	(4.6)^F_C	(5.6)^S_C	(6.4)^S_F	(6.8)^F_S	[6.7]^C	(6.8)^C_F	6.8	6.6^F	6.7	(6.6)^S	(6.7)^S_J	[6.9]^C_J	(6.6)^J	[6.9]^C	(7.0)^S	(7.1)^S	(6.8)^S	(7.3)^S_A	(6.7)^J_S	(6.9)^J_S
29	(6.6)^S	6.4	(6.2)^S_F	(5.4)^J_S	4.9^F	5.2^F	6.4	[6.4]^A	6.8	7.2	(7.8)	(7.2)	7.6	7.8	7.8	7.8	7.8	7.8	8.2	7.8	(7.4)^S	(7.4)^S	(7.0)^S	(6.4)
30	6.3	(5.9)	(5.6)^S	(5.4)^S_J	4.9^F	5.5	(6.8)^S_C	(7.4)^C	(7.0)^S_O	7.6	7.6	(7.9)^S_C	8.0	8.4	8.2	(8.0)	(7.8)	7.8	8.0	(7.9)^S	(7.7)^S_C	(7.9)	(7.7)	(7.6)^S
31	(7.1)^C	6.8	(6.5)^J_C	6.2	(5.9)^J_C	(6.0)^C	7.0	7.6	8.1	(8.7)	8.6	C	(B)^C	(7.8)^C	C	[8.0]^C	[8.1]^C	(8.0)^O	(7.7)^C	(7.8)^C	[7.6]^C	(7.7)^C	C	C
•																								
Median	6.3	6.0	5.6	(5.3)	4.8	5.5	6.4	(6.4)	(7.0)	(7.0)	7.1	7.0	7.1	7.2	7.2	7.1	7.0	7.2	7.2	(7.2)	(7.4)	(7.2)	(7.0)	(6.9)
Count	27	26	26	26	26	25	25	25	27	29	27	25	24	27	25	26	28	28	30	27	28	28	26	27

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE : 1946 O - 706819

Form adopted June 1946

TABLE 62

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

h'F1 (Characteristic), km (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A. H. S.

Calculated by: A. H. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1								C	C	C	(190)	$[200]^{C}$	200	C	C	(190)	C	C	C							
2								C	C	A	(210)	C	C	C	$(190)^{A}$	C	C	C	C							
3								C	210	220	(220)	180^{H}	180^{H}	190	240	220	220	220	A							
4								220	210	200	190	A	C	$[200]^{C}$	200^{H}	A	190^{H}	210	220	A						
5								Q	220	210	A	A	(180)	180^{H}	200	210	210	200	Q							
6							A	190	200^{H}	210	$[210]^{C}$	$[210]^{C}$	A	200	190	200	C	C	C							
7								200	200	200^{H}	170^{H}	190^{H}	180^{H}	$(200)^{A}$	200^{H}	200^{H}	A	A	250							
8							220	A	C	210^{H}	180^{H}	190	200	180	$[210]^{C}$	230	200	230	A							
9							220	200	230	250^{H}	180	180^{H}	200	190	180^{H}	230	180	200	220							
10								210	210	190	$(210)^{A}$	$(240)^{A}$	190	200	(200)	C	(250)	C	A							
11							A	A	220	(240)	180^{H}	180^{H}	230	200	(220)	210	220	(210)	(250)							
12						230	C	C	(200)	220	200	230	A	210	230	(200)	(200)	200	(220)							
13								210	A	A	180^{H}	A	200^{H}	200	(200)	200	200	200	230							
14								220	220	A	$(230)^{A}$	(180)	200	200	200	$(200)^{H}$	200^{H}	A	A							
15							240	240	A	(190)	190	220	240	200^{H}	200^{A}	240	200^{A}	200^{A}	A							
16								C	220	240^{H}	180^{H}	$[230]^{C}$	200	230	$[210]^{A}$	210	240	230	220							
17								Q	Q	200	220	170^{H}	170^{H}	$(190)^{A}$	200	B	$(240)^{S}$	$(220)^{A}$	$(240)^{K}$	Q^{K}	200^{S}_{K}					
18							A^{K}	A^{K}	A^{K}	A^{K}	210^{A}_{K}	A^{K}	A^{K}	A^{K}	A^{K}	200^{A}_{K}	200^{K}	210^{H}_{K}	230^{A}_{K}	260^{K}						
19							250^{F}_{K}	220^{K}	200^{K}	200^{K}	190^{K}	180^{H}_{K}	A^{K}	190^{K}	220^{K}	$(240)^{A}_{K}$	A^{K}	A^{K}	A^{K}							
20								230^{K}	200^{A}_{K}	220^{S}_{K}	200^{K}	180^{K}	190^{H}_{K}	230^{K}	A^{K}	A^{K}	A^{K}	A^{K}	230^{K}							
21								220^{H}	220^{K}	200^{S}_{K}	180^{K}	C^{K}	200^{H}_{K}	210^{K}	220^{K}	$(200)^{S}_{K}$	220^{K}	210^{F}_{K}	220^{K}							
22								230	220	A	$(200)^{C}$	$(240)^{C}$	$(200)^{C}$	200	230	190	A	A	$(240)^{A}$							
23							230	210	200^{H}	220	B	210	200^{H}	200	200	200^{H}	200^{H}	230^{H}	230							
24								Q	(220)	200	190^{H}	$(240)^{H}_{A}$	B	B^{C}	A^{C}	A	220	200^{H}	240							
25							240	230^{A}_{K}	220^{K}	200^{K}	200^{K}	210^{K}	$(210)^{B}_{K}$	200^{K}	(200)	$[200]^{C}$	$(200)^{C}$	C	C							
26								C	C	C	C	C	C	C	C	C	200	260	Q							
27								220^{K}	230^{K}	210^{K}	200^{K}	$(220)^{K}$	C^{K}	C^{K}	$(210)^{K}$	A^{K}	220^{K}	A	Q							
28								$(220)^{A}$	$(220)^{A}$	$(200)^{C}_{H}$	$(200)^{C}$	200	180^{H}	200	200	$(230)^{C}$	$[220]^{C}$	210	A							
29								A	A	190	170^{H}	180^{H}	A	A	A	A	$(200)^{A}$	A	Q							
30								Q	A	(200)	$(200)^{S}_{C}$	200	180	190^{H}	220	200	200	230	200							
31								A	$(210)^{A}$	240	B	C	$(B)^{C}$	C	C	C	C	C	C							
Median							235	220	220	200	200	200	200	200	200	200	200	210	230							
Count							6	16	21	24	27	23	20	23	24	21	23	18	15							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ■

U. S. GOVERNMENT PRINTING OFFICE : 1946 O - 700313

Form adopted June 1946

TABLE 63

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

f°F1 (Characteristic), Mc (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat 39° N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A. H. S.

Calculated by: A. H. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								C	C	C	5.0	[5.5]^{C}	(5.6)	C	C	(5.4)	C	C	C					
2								C	C	4.6	5.1	C	C	C	(5.4)	C	C	C	L					
3								C	L	C	(5.2)^{J}	(5.3)^{H}	(5.6)^{H}	(5.4)^{H}	(5.2)	(4.9)^{H}	L	4.7	A					
4								L	4.8	(4.9)^{F}	(5.4)^{U}	A	(5.5)	C	(5.0)^{H}	A	(5.0)^{H}	4.8	L	A				
5								Q	L	L	A	(5.2)$^{J}_{A}$	5.5^{H}	(5.2)^{J}	5.0	4.8	4.6	L	Q					
6							A	(3.8)	(4.6)^{H}	4.9	[5.0]^{C}	(5.2)^{H}	(5.2)$^{J}_{H}$	(5.0)	[4.9]^{C}	(4.9)	C	C	C					
7								4.1	(4.4)	4.7^{H}	(4.8)^{H}	4.9^{H}	5.0^{H}	5.2^{H}	5.0^{H}	4.9^{H}	L	(4.6)	L					
8							L	4.0^{H}	C	5.4^{H}	5.3^{H}	(5.4)	(5.8)	5.5^{F}	[5.5]^{C}	5.4	5.3	4.8	L					
9							L	4.3	5.2	5.4^{H}	(5.4)	(5.4)^{H}	(5.4)	(5.8)^{H}	(5.6)$^{H}_{F}$	(5.6)^{F}	(5.1)^{F}	(5.0)^{H}	L					
10								4.4	5.0	(5.4)	(5.5)	5.5	5.6	(5.4)^{U}	(5.2)^{H}	C	(5.2)	C	L					
11							A	A	(4.9)	(5.3)	5.4	5.5	(5.6)	5.4^{H}	(5.5)^{S}	(5.4)	5.3	5.0	L					
12						L	C	C	(4.8)	5.3	(5.4)	(5.5)^{F}	A	(5.6)	(5.3)	(5.2)	(5.0)	4.8^{F}	L					
13								L	A	A	(5.6)^{H}	A	5.4^{H}	5.4^{H}	(5.4)	(5.5)	5.3	4.8	L					
14								L	L	A	(5.5)	(5.6)	5.7	(5.7)^{H}	(5.2)^{H}	(5.2)^{H}	(5.1)^{H}	A	A					
15							L	4.9	A	(5.1)	(5.2)	5.5^{F}	5.8	5.5$^{F}_{H}$	5.4	5.3	(5.3)	L	L					
16								C	5.4	(5.4)^{H}	(5.5)^{H}	N	(5.5)	5.4	(5.2)$^{F}_{A}$	5.4^{H}	5.2^{F}	4.9	L					
17								Q	Q	(5.9)^{S}	6.3	6.3^{H}	(5.9)^{H}	(5.9)^{C}	(5.5)^{S}	(5.4)^{C}	5.0	(4.9)$^{S}_{K}$	(4.1)$^{S}_{K}$	Q^{K}	2.0^{K}			
18							A^{K}	A^{K}	4.7$^{F}_{K}$	A^{K}	(5.2)^{K}	A^{K}	A^{K}	A^{K}	A^{K}	5.1$^{F}_{K}$	(4.7)^{K}	4.0$^{H}_{K}$	3.8^{K}	L^{K}				
19							(3.8)$^{F}_{K}$	4.5^{K}	4.4^{K}	5.0^{K}	5.2^{K}	5.3$^{H}_{K}$	A^{K}	5.3^{K}	5.3^{K}	5.2^{K}	[4.9]$^{A}_{K}$	4.6^{K}	(4.6)^{K}					
20								(4.5)$^{F}_{K}$	4.8$^{F}_{K}$	4.9^{K}	(5.1)^{K}	5.2^{K}	5.5$^{H}_{K}$	5.4^{K}	(5.3)^{K}	A^{K}	A^{K}	4.7^{K}	L^{K}					
21								4.6^{H}	(4.9)$^{S}_{K}$	5.2^{K}	5.4^{K}	[5.4]$^{C}_{K}$	5.4$^{H}_{K}$	5.4^{K}	(5.3)$^{C}_{K}$	5.2$^{H}_{K}$	5.1^{K}	4.8$^{F}_{K}$	L^{K}					
22								L	L	A	(5.4)^{C}	[5.4]^{C}	(5.4)^{C}	(5.5)	5.4	L	(5.2)^{A}	L	L					
23							(4.5)^{F}	(5.0)^{F}	(5.1)$^{S}_{H}$	(5.6)^{C}	B	(5.6)^{S}	(5.8)^{H}	(5.6)^{S}	5.1	5.0^{H}	5.1$^{F}_{H}$	(4.6)^{H}	4.8					
24								Q	(5.3)	L	(5.8)^{H}	(5.8)	B	B^{C}	A^{C}	[5.6]^{A}	(5.4)	(5.0)$^{S}_{H}$	L					
25							3.7	4.6^{K}	(5.4)^{K}	(5.5)$^{S}_{K}$	(5.4)$^{H}_{K}$	5.4^{K}	5.7^{K}	5.4^{K}	[5.4]^{C}	[5.4]^{C}	(5.2)^{C}	C	C					
26								C	C	C	C	C	C	C	C	C	(4.8)$^{H}_{C}$	L	Q					
27								4.2^{K}	4.9^{K}	4.9^{K}	(4.9)$^{C}_{K}$	(5.2)^{K}	C^{K}	(5.4)^{K}	5.0^{K}	5.0^{K}	(4.6)^{K}	A	Q					
28								(4.6)$^{C}_{J}$	(5.2)^{S}	(5.2)$^{C}_{H}$	(5.5)^{C}	(5.5)	5.7^{H}	(5.5)	5.4	(5.2)^{C}	[5.2]^{C}	(4.8)	L					
29								L	A	L	(4.9)^{H}	A	5.2	A	A	(5.5)^{A}	L^{A}	L^{A}	Q					
30								Q	(L)^{C}	(5.4)$^{S}_{C}$	(5.6)^{S}	5.8	5.7	5.4^{H}	5.3	(5.1)	(5.0)^{H}	L	L					
31								A	L	L	B	C	(B)^{C}	C	C	C	C	C	C					
Median								4.5	(4.9)	5.2	(5.4)	(5.4)	5.6	(5.4)	(5.3)	(5.2)	(5.1)	4.8						
Count								13	17	20	27	23	23	23	25	24	23	17						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 708519

TABLE 64

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'E (Characteristic), km (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat. 39.0°N, Long. 77.5°W

75°W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A. H. S.

Calculated by: A. H. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	(90)	$[90]^{C}$	90	C	C	100	C	C	C	C				
2							C	C	C	80	80	C	C	C	90	C	C	C	100	110				
3						C	100	C	100	90	100	100	90	90	90	90	90	90	100					
4							100	80	80	90	80	90	90	90	80	A	100	90	100	90				
5						140	100	90	100	90	90	90	80	90	90	90	90	90	90					
6							90	90	100	100	C	90	100	100	90	100	C	C	C	100				
7							100	100	90	90	80	90	100	90	90	90	90	90	100	100				
8							90	90	C	90	90	90	90	90	90	90	90	90	100	100				
9							80	80	90	90	90	80	90	90	90	80	90	90	90	110				
10							100	90	90	90	90	80	90	80	(90)	C	(90)	$[90]^{C}$	100					
11							100	90	90	90	90	90	90	90	90	(100)	(100)	90	90	100				
12						100^{S}	C	C	100	$(120)^{C}$	$(110)^{C}$	$(100)^{C}$	$(100)^{C}$	$(100)^{C}$	80	80	100	90	90	90				
13							100	90	(80)	80	100	80	90	90	(90)	100	100	100	100	90^{S}				
14							100	90	80	80	80	80	80	90	90	100	100	100	100	110				
15							110	90	100	(90)	100	100	90	100	80	100	100	100	100	C				
16							C	C	80	90	90	90	80	90	90	90	100	90	90	90				
17						100	90	80	100	90	80	90	90	90	100	B	90	90^{K}	100^{K}	110^{S}_{K}				
18							100^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	100^{K}	100^{K}				
19							100^{K}	90^{K}	90^{K}	100^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	100^{K}				
20						90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	80	90^{S}				
21							90	90	90^{K}	90^{K}	90^{K}	$[90]^{C}_{K}$	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	90^{K}	100^{K}	100^{K}				
22						140^{S}	100	100	90	80	90	C	$(90)^{C}$	90	80	100	100	100	100	100^{S}				
23						90^{F}	100^{A}	100	100	90	B	90	100	100	100	100	100	100	100	100				
24							100	100	(100)	90	90	90	B	$(100)^{B}$	$(90)^{C}$	100	100	100	100	100^{F}_{S}				
25							$(100)^{S}$	100^{K}	100^{K}	100^{K}	100^{K}	100^{K}	$(100)^{B}_{K}$	100^{K}	100	C	$(100)^{C}$	C	C	C				
26							C	C	C	C	C	C	C	C	C	C	C	90	100					
27						100^{K}	90^{K}	100^{K}	90^{K}	100^{K}	100^{K}	90^{K}	C^{K}	100^{K}	100^{K}	100^{K}	100^{K}	100	100					
28							100	100	100	100	$(100)^{C}$	100	100	110	100	$(100)^{C}$	$[100]^{C}$	100	100					
29							100	80	90	100	100	100	100	100	100	100	100	100	100^{F}					
30							100	100	100	100	100	100	100	B	100	90	100	100	100	130				
31							100	90	100	100	B	C	$(B)^{C}$	C	C	$(100)^{C}$	$(100)^{C}$	$(100)^{C}$	$(100)^{C}$	$(100)^{C}$				
Median						100	100	90	90	90	90	90	90	90	90	100	100	90	100	100				
Count						7	26	25	27	29	27	27	26	26	28	25	27	27	28	21				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE: 1946 O - 705813

Form adopted June, 1946

TABLE 65

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

f°E (Characteristic), Mc (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A.H. S.

Calculated by: A. H. S.,

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	3.9	[4.1]C	(4.2)	C	C	4.1	C	C	C	C				
2							C	C	C	A	3.9	C	C	C	A	C	C	C	2.3	(1.7)				
3						C	2.2	C	3.1	C	(3.7)	C	C	C	3.8	(3.6)	(3.0)	3.0	2.6	-				
4							A	(2.9)F	3.1F	(3.4)	3.1	A	4.0	4.1	A	A	(3.1)	3.0	(2.4)	1.9				
5						1.7F	2.3	2.7F	[3.1]C	3.3F	A	A	A	C	(3.7)	(3.3)	3.3	3.1	2.6					
6							2.3	2.7	3.1	3.3	C	3.5	3.5	A	A	(3.3)	C	C	C	(1.8)F				
7							A	2.7F	3.0F	3.3F	3.5F	A	3.8	A	(3.6)	3.5	3.3	3.0	2.6	1.9				
8							2.1	2.6F	C	3.5	3.6	(3.5)	(3.9)F	(4.0)	(3.9)	(3.8)	3.7	3.3	2.7F	1.9F				
9							(1.9)F	(3.0)F	3.3	3.7	(3.8)	(3.8)	(4.0)	4.0	4.0	4.0F	3.7F	3.2	2.9F	2.2F				
10							2.3F	3.1F	3.3F	(3.9)	(3.9)	A	4.0F	(3.8)	(3.9)	C	A	[3.3]C	(2.7)					
11							A	2.9	A	A	(3.6)	(3.8)	(4.1)	4.0	4.0	3.8	3.7	A	2.9	(1.5)S				
12						(1.8)	C	C	C	3.7	3.8	A	4.1	4.1	(3.7)	3.7	A	A	(2.3)A	(2.0)				
13							(2.3)	3.0	(3.4)	3.5	A	A	(3.9)	4.0	(3.8)	3.7	(3.7)	A	A	1.7S				
14							A	3.1	3.6	A	(3.8)A	A	(4.1)	A	(3.8)	3.6	(3.5)	3.4	2.9F	A				
15							2.3	2.9F	3.3	(3.4)	A	(3.8)	(4.0)	A	A	A	3.0	A	2.7	C				
16							C	C	3.6	3.8	(3.8)	4.1	4.0	4.0	A	A	3.6F	3.3	2.8F	2.0F				
17						(1.9)SF	2.6F	3.0A	3.4	(3.9)F	(4.0)S	(4.0)S	A	A	A	B	S	AK	2.9K	1.9FK				
18							2.1FK	(2.8)AK	3.3AK	AK	AK	AK	AK	AK	AK	AK	AK	(3.2)AK	2.9K	(2.0)AK				
19							2.3FK	3.0K	AK	AK	AK	AK	AK	AK	(3.9)K	4.0K	3.8K	3.4K	2.7FK	AK				
20						1.7FK	2.3K	(2.8)K	3.2FK	(3.5)AK	(3.9)K	(3.9)SK	(4.2)K	(4.2)K	(4.1)SK	4.0SK	3.8K	3.5K	2.8FK	1.9S				
21							2.3	3.0	(3.4)AK	AK	AK	CK	(4.1)K	(4.2)K	4.1K	(4.0)SK	(3.5)SK	3.6K	2.9K	2.2K				
22						1.7F	2.5	3.2	3.7	3.8	C	C	(4.0)C	(3.7)	A	A	(3.8)	3.4	2.6A	(2.0)F				
23						AF	2.6F	3.2F	3.7	A	B	(4.0)	(4.0)A	(4.2)	(4.0)	(3.9)C	3.5	3.3	2.8	2.0				
24							2.4	3.2	(3.6)	3.8	4.0	4.2	B	(4.2)B	(4.0)C	(4.0)A	(3.7)	(3.5)	(3.0)F	(2.1)F				
25							(2.0)F	3.0K	3.5K	(3.6)K	3.7K	3.7K	(4.0)AK	[4.0]AK	(3.9)	C	(3.7)C	C	C	C				
26							C	C	C	C	C	C	C	C	C	C	C	3.3	2.9					
27						1.7FK	2.2FK	2.9K	3.2FK	3.6K	(3.7)K	AK	CK	(4.2)	3.9K	3.6K	3.4K	A	A					
28							A	(2.9)A	A	(3.3)C	[3.5]C	(3.8)	(4.0)	(4.0)S	3.9F	(3.6)C	[3.5]C	3.3F	(2.6)					
29							(2.1)F	(2.8)A	A	3.9F	(3.9)A	(4.1)A	(4.2)A	(3.9)A	(3.8)A	(3.8)A	A	A	AF					
30							A	(2.8)A	A	A	(3.8)F	(4.0)	(4.0)A	B	(3.9)F	4.0	3.7	3.3	2.8	2.0				
31							2.1	2.7	(3.0)	A	B	C	(B)C	C	C	(A)C	(A)C	(A)C	(2.3)C	(1.9)C				
Median						1.7	2.3	2.9	3.3	3.6	(3.8)	(3.9)	(4.0)	(4.0)	(3.9)	3.8	3.6	3.3	2.7	1.9				
Count						6	20	25	21	19	20	15	21	17	20	20	21	19	25	19				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE : 1946 O - 703519

Form adopted June 1946

TABLE 66

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Es (Characteristic), Mc, km (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A. H. S.

Calculated by: A. H. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C				C	C		C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	5.2 100	5.5 100	C	C	C	6.2 90	C	C	C		2.7 100	3.4 100		C	C
3						1.8 110	4.1 100	C	3.6 100						4.1 120			3.6 120	5.8 110	(4.1) 110	3.4 100	(3.2) 100	2.8 100	
4	2.1 100		3.4 90	1.7 90	(2.8) 100		3.2 90	(4.0) 80	3.5 110	3.9 120		8.0 100	4.1 100		4.3 80	6.4 80	(3.6) 120	3.4 130	(3.0) 100	4.9 110	5.2 110	3.6 100	3.4 100	4.4 90
5						1.8 100		3.4 90		4.0 100	6.6 100	5.8 100	5.1 100						3.7 100	3.4 100	1.8 100	2.5 100	3.0 100	4.4 100
6	3.3 90	5.1 90	4.6 90	(7.6) 90	3.2 80	3.1 80	3.4 80	4.2 100	4.6 110	4.8 100	C	4.0 100	8.3 100	6.2 110	4.0 100	3.8 100	C	C	C	3.9 100	5.4 100	4.9 90	3.0 100	3.0 100
7	2.7 120			2.8 100	2.9 100	4.6 100	3.6 90		3.4 100	4.9 100	4.2 110	4.0 100	3.8 100	5.1 90			7.1 110	5.1 100	4.1 110	3.5 100	3.8 100	3.0 100	3.6 90	2.9 90
8	2.0 100	2.6 90	2.8 90	2.1 100	2.8 100	3.0 90	3.3 100	4.2 100	C	(4.3) 100	4.2 100	4.0 100				4.8 120	4.9 130	6.4 120	7.9 100	3.7 100		4.8 100	3.8 90	(4.1) 90
9	3.6 100	3.3 90	3.1 80	3.8 80	4.0 90	3.3 100	4.6 80	6.6 80	4.0 100	(5.6) 100						6.6 100	(4.8) 100			3.7 110	3.3 110	5.7 90		3.4 100
10		2.4 90			3.0 100	2.0 100	5.2 90	7.0 100			5.8 90	8.0 100	5.2 100	4.4 100	(4.4) 110	C	(5.6) (110)	C	(5.6) 90	5.9 100	8.2 100	C	(7.2) 100	(6.1) (100)
11	6.6 100	1.9 100	4.6 100	3.0 90	(4.3) 100	5.4 90	3.8 100	6.7 90	4.6 100	(6.0) 100	4.2 90				(4.4) 120	4.8 120	(7.0) 110	3.7 90		3.1 120			4.6 100	
12							C	C		5.4 110	(6.0) 100	(6.7) 100	6.8 100	5.5 100	4.7 100	4.5 100	4.0 100	4.8 100	(3.4) 90	5.8 100				
13			(3.5) 90	(5.4) 90	4.0 90	3.4 100	(3.6) 100	4.8 90	(8.2) 90	7.5 90	(9.0) F 100	8.4 100		4.3 120	(4.5) 100	4.6 110		(4.6) F 100	4.2 100	3.3 100	3.6 90	6.3 90	(5.5) 90	(2.5) 90
14	4.1 90	(2.6) 90				(3.5) 110	4.6 100	4.6 100	4.4 100	6.7 100	8.9 100	4.3 100		5.4 100	4.4 100	(4.0) 100		5.4 100	(6.8) 120	9.0 110	(5.4) 110	(3.3) 100	3.6 110	
15	4.7 100	(2.2) 150		1.8 110	2.4 120	3.1 120	6.0 110	4.9 110	(5.8) 110		4.3 100			4.3 100	5.2 110	6.2 100		4.1 100	(4.6) 110	C	C	C	C	C
16	C	C	C	C	C	C	C	C	(4.1) 100	(4.0) 120	4.3 110	4.5 110	4.3 110	4.3 110	6.2 90	4.4 100	(4.6) F 110	(4.7) 110		3.4 110		3.4 90	(3.2) F 100	(3.7) 100
17	(2.5) 100	2.2 90	(3.3) 90				3.6 90	4.4 100	(4.1) 100	(5.3) 100		(4.5) 100	(5.2) 90	5.2 90	(4.5) 90	B	(4.1) S 120	(3.8) S 90					3.2 110	4.6 100
18	4.2 100	(5.1) 100	(5.5) S 100	(7.2) S 100	(4.0) S 100	4.7 100	6.8 100	8.0 100	5.5 110	11.2 100	(7.3) 90	8.7 90	7.3 90	13.0 100	12.1 90	7.8 100	5.6 90	4.8 100	3.6 110	3.2 100			2.4 150	
19	3.6 110	4.6 110			3.5 120	3.6 110			3.2 90	3.8 100	4.3 100	4.3 100	(8.0) 100	4.3 90		5.5 110	7.5 110	5.9 100	5.5 90	3.7 100		2.3 100		4.0 90
20		3.7 120	3.9 120							3.7 100			4.6 130	4.6 120	5.8 120	6.8 120	9.0 110	(6.5) 100	6.6 90	4.7 90	3.9 90	(3.5) 130	4.1 110	
21	2.4 110	3.6 F 90	(4.0) 90	(3.2) 100			4.9 90	3.6 100	(3.4) 90	(4.1) S 100	(7.8) S 120	C								3.7 130	3.0 100	2.2 F 100		
22					2.8 100		3.1 120	4.8 110	5.0 110	6.6 100				(6.4) S 110	4.7 80	4.2 100	5.5 110	5.8 100	(6.2) S 100	3.3 100	2.0 100	(5.3) 110	(5.6) 110	(3.8) S 100
23	(3.6) S 100	(6.0) 100	(5.4) S 90	(4.0) 100	(3.1) S 100	(4.0) SF 100	3.0 100			(3.9) S 120	B		(4.2) 120						(3.8) 100	(3.6) S 100	(3.2) 110		2.8 100	
24	(3.4) 100	(3.6) 100							(5.0) (120)	4.2 120		5.3 100	B	(4.8) S (110)	(6.5) C 110	9.5 100			(5.2) (120)	3.4 F 110	(3.1) 100			
25	(3.0) SC 100		3.6 120	(2.8) 120	2.2 120		(3.6) F 100							4.8 100	4.3 100	C		C	(5.2) C (100)	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		3.9 120	4.9 110	(6.0) F 100	(6.0) F 100		(4.0) 100	(4.6) 100
27	(4.0) 100			1.8 110	1.9 100		3.8 100	3.5 100		4.1 110		4.4 100	C		5.6 100	5.4 120	(4.0) S 100	4.7 120	(6.8) 110	3.9 100	4.6 100		(5.3) 100	(5.6) 100
28	(4.0) SC (100)	(4.2) SC (100)	(4.2) SC (100)	(4.7) C (100)	(3.6) C (100)	(3.6) 100	(4.8) S 100	(4.7) C 100	7.9 100							(4.0) C 120	C		(4.1) S 100	1.9 110	3.2 100	(3.8) S 100	(6.0) S 90	5.6 F 100
29					1.8 100	(5.6) S 90	(3.6) 100	4.8 100	8.0 100		5.0 100	5.8 F 100	(5.6) 100	6.9 100	7.1 100	(5.9) 100	5.5 100	5.4 100	5.6 F 100	(3.8) S 100	5.1 100	3.4 100	(4.8) S 100	8.2 100
30	5.4 100	6.8 100	(4.8) S 100	2.0 100	(4.2) S 100	4.6 100	(4.1) S 100	4.8 100	(5.4) S 100	(5.0) SC 100				B					3.6 110	2.0 100	3.5 100	3.8 100	5.8 100	5.5 100
31	(4.4) 100	3.1 100	3.3 100				4.8 100	7.8 90	(7.7) 100	4.0 100	B	C	(B) C	C	C	C	C	C		C			C	C
Median	3.0	2.6	3.1	1.8	2.8	3.0	3.6	4.4	4.1	4.1	4.2	4.0	3.7	4.4	4.4	4.5	4.0	4.1	4.2	3.7	3.2	3.0	3.5	3.6
Count	27	27	27	27	27	27	26	25	27	29	27	27	26	26	28	25	26	25	28	27	28	27	26	26

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 708519

Form adopted June 1946

TABLE 67

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

F2-M1500 (Characteristic), ____ (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A. H. S.

Calculated by: A. H. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	1.6	[1.6]C	(1.6)J	C	C	(1.6)J	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	(1.7)	(1.7)	C	C	C	(1.6)	C	C	C	1.9	1.9	1.7	2.0	C	C
3	1.6	(1.8)	C	C	C	C	2.0	[2.1]C	2.1	[2.0]C	(2.0)	(1.6)	(1.8)	1.8	1.8	1.8	1.8	1.8	1.8	[1.8]C	1.8	(1.8)J	1.8	(1.8)J
4	(2.0)	1.9	1.9	1.6	1.8	1.9	2.1	2.0	1.9	1.9	(1.9)J	(1.9)J	1.8	[1.8]C	(1.7)	(1.8)	(1.9)	1.9	1.9	1.9	1.8	1.8	1.9	1.9
5	2.0	1.9	1.9	1.9	2.0	2.0	2.2	2.2	2.2	1.8	(2.0)	1.8	1.9	1.8	1.8	1.8	1.9	1.8	1.8	2.0	1.9	1.8	(1.9)	1.8
6	1.9	2.1	1.9	1.7	1.9	2.0	2.1	1.9	2.1	(2.0)	[2.0]C	(1.8)J	(1.8)J	1.8	1.8	1.9	C	C	C	2.1	1.8	1.8	(2.1)	1.9
7	1.8	1.6	1.7	1.8	1.9	1.9	2.0	1.9	1.8	2.0	(2.0)	1.8	(1.8)	1.9	1.8	1.7	1.9	1.9	1.9	2.0	(2.0)	2.0	(1.9)	1.8
8	(1.8)	(1.8)J	1.7	1.8	1.8	2.2	2.0F	[2.2]CH	[2.0]C	1.8	(1.9)	(1.8)	1.7	1.8	1.8	1.9	1.9	1.8	1.9	1.9	1.6	(1.9)	(2.0)	1.9
9	1.8	1.7	(1.7)J	1.8	1.8	2.2	2.0	2.0	1.8	[1.8]C	(1.9)J	(1.9)J	1.8	(1.8)	1.8	1.8	1.8	1.8	1.8	[2.0]C	1.9	(1.9)J	1.8	(1.8)
10	(1.8)	1.8	1.8	1.8	(1.9)	1.8F	1.9	(2.0)J	2.0	1.6	(1.9)	1.8	1.6	1.8	(1.8)	[1.8]C	(1.8)	[1.8]C	(1.7)	1.8	1.9	[1.9]C	(1.9)	(1.8)
11	1.8	1.6	1.7	1.6	(1.9)	1.8	2.1	(2.0)	(1.6)	(1.5)S	(1.6)	1.8	1.8	(1.6)	1.8	(1.7)	(1.8)	(1.8)	1.8	[1.8]C	1.8	1.8	(1.9)	1.8
12	(1.7)J	1.7	1.6	1.8	(1.8)	1.9	C	C	(1.9)	(1.5)	(1.8)	(1.6)	1.6	(1.5)	(1.5)J	1.6	1.8	(1.8)	1.5	1.9	(1.8)	1.8	(1.8)	1.8
13	1.8	1.8	(1.8)J	(1.7)J	(1.8)F	2.0	2.0	2.0	(1.8)	(1.6)	[1.6]CA	(1.6)	1.6	1.6	(1.6)	1.6	1.8	1.7	1.8	1.8	1.8	(1.8)	1.8	1.8
14	1.9	1.9	1.8	1.8	1.8	2.0	(2.0)	(2.0)	2.0	1.9	1.8	(1.8)	1.8	(1.7)	(1.7)J	(1.6)	(1.8)	1.8	(1.8)	(1.8)	(1.9)	(1.8)	(1.8)	1.7
15	(1.7)	1.7	1.8	(1.8)	1.8	(1.9)J	(1.8)	(1.8)	1.9	(1.8)	1.8	(1.7)	(1.6)	1.6	1.6	1.6	1.6	1.7	1.7	C	C	C	C	C
16	C	C	C	C	C	C	C	C	1.8	1.8	(1.8)	(1.8)	2.0	1.7	1.8	1.7	1.7	1.8	(1.8)	(1.9)	(1.9)	(1.8)	(1.8)	(1.8)
17	(1.9)	1.8	1.8	(1.8)J	1.8	2.0	2.0	(2.0)	(1.9)S	(2.0)S	(1.8)J	(1.7)S	(1.6)S	1.7	(1.5)	(1.5)	(1.5)	(1.5)SK	(1.6)SK	(1.7)SK	[1.7]SK	(1.9)JK	(1.6)SK	(1.6)JK
18	(1.8)SK	(1.6)JK	(1.4)K	(1.8)JK	(1.4)FK	(1.9)JSK	A K	A K	G K	A K	G K	A K	A K	A K	A K	G K	1.3K	1.4K	1.6FK	1.8K	1.7K	(1.6)JK	1.6K	1.6K
19	(1.6)K	1.8K	(1.6)JK	(1.5)FK	(1.5)FK	(1.7)FK	(1.4)FK	1.5FK	1.4K	G K	G K	G K	A K	A K	1.4K	1.5K	[1.6]AK	1.7K	1.7K	1.8K	1.7K	1.7K	(1.7)K	(1.6)K
20	(1.6)FK	(1.8)K	(1.7)FK	(1.6)FK	1.6K	1.7K	(1.8)FK	[1.5]JK	G K	G K	G K	G K	G K	G K	G K	A K	A K	1.6K	1.7K	1.8	(1.7)S	(1.8)J	(1.8)	(1.8)
21	(1.9)	(1.6)F	(1.6)JS	(1.4)FS	(1.7)FS	(1.8)FS	1.8F	1.6F	1.6FK	1.6FK	1.4K	C K	G K	1.4FK	(1.4)JK	1.4K	1.6K	(1.7)FS	(1.8)FS	(1.8)K	(1.8)FS	(1.7)S	(1.8)S	(1.7)S
22	(1.8)S	1.8	(1.8)F	(1.8)S	(1.7)FS	(1.8)FS	2.0	(1.7)S	(2.0)S	(1.9)C	C	C	(1.6)C	1.6	1.7	(1.7)S	1.6	1.8	1.7	1.8	(1.8)S	(1.7)JS	(1.8)S	(1.7)S
23	(1.8)S	1.8	1.8	1.6	(1.6)S	1.6	(1.6)F	1.7F	1.9	1.7	B	(1.7)	1.5	1.6	1.4	1.5	(1.6)FS	1.6	1.8	1.8	(1.8)FS	(1.8)	(1.8)J	1.7
24	(1.6)J	(1.7)J	(1.7)J	(1.7)J	1.8	1.8	2.0	2.2	(1.8)	(1.9)S	(1.8)	(1.8)	1.6	1.7	(1.7)C	[1.7]A	1.8	1.8	1.9	1.8	(1.8)SC	(1.8)SC	(1.7)SC	(1.7)SC
25	(1.8)JC	1.8	1.7	(1.7)JS	(1.6)S	(1.6)JS	1.8	1.8K	2.0K	G K	1.6K	C K	G K	1.6K	1.7	[1.7]C	(1.8)C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(1.7)	(1.7)	(1.8)	(2.0)S	(1.8)JC	[1.8]JCK	(1.8)K	(1.8)JCK
27	(1.7)JCK	(1.7)K	(1.7)FK	(1.6)K	(1.8)K	2.0K	2.2K	1.6K	G K	1.4K	G K	1.4K	C K	C K	G K	(1.8)CK	1.8K	(2.0)	(2.0)J	(2.0)C	(2.0)J	(1.8)C	(1.8)C	(1.8)C
28	(1.8)JC	(2.0)SC	(1.8)SF	(1.8)FC	(1.8)FC	(2.0)F	(2.0)FC	(2.0)F	(1.8)S	(1.8)FC	(1.8)FC	1.8	1.6	(1.6)S	1.7	(1.6)CJ	[1.6]C	(1.8)	1.9	2.0	2.0	(1.8)S	(1.8)SC	(1.8)S
29	(1.7)JS	1.8	(1.8)J	(2.0)J	(1.8)S	(2.0)S	2.2	(2.4)S	[2.2]A	2.2	2.2	2.0	(1.8)S	1.9	(1.8)FS	1.8	1.8	1.8	1.9	2.0	1.8	(1.8)JS	(1.8)S	(1.8)S
30	1.8	[1.7]A	(1.7)	(1.7)JS	(1.7)S	(2.0)S	(2.2)	(2.4)S	(2.1)SC	(1.9)SC	[1.9]SC	1.8	1.8	1.8	1.8	(1.8)	(1.8)	1.8	1.9	1.9	(2.0)S	(1.8)JC	(1.8)J	1.8
31	(1.8)JC	1.8	1.8	1.8	(1.8)C	(2.0)CJ	(2.0)C	[2.1]A	1.9	(2.0)	1.8	C	(B)C	C	C	(1.7)JC	[1.8]JC	(1.8)JC	(1.8)C	(1.9)C	(1.8)C	(1.8)C	C	C
Median	(1.8)	1.8	1.8	(1.8)	(1.8)	1.9	2.0	2.0	1.9	1.8	(1.8)	(1.8)	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.8	(1.8)	(1.8)	(1.8)
Count	27	27	26	26	26	26	25	25	28	28	28	24	25	24	27	28	27	27	28	28	28	28	26	26

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 68

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

F2-M3000 (Characteristic), ____ (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. L. S., A. H. S.

Calculated by: A. H. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	2.5	[2.5]^{C}	(2.5)^{J}	C	C	(2.5)^{J}	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	(2.6)	(2.7)	C	C	C	(2.4)	C	C	C	2.9	2.9	2.5	2.8	C	C
3	2.4	(2.8)	C	C	C	C	3.0	[3.0]^{C}	3.1	[2.9]^{C}	(2.8)	(2.6)	(2.7)	2.8	2.8	2.7	2.8	2.8	2.8	[2.9]^{C}	3.0	(2.8)^{J}	2.8	(2.8)^{J}
4	(3.0)	2.8	3.0	2.8	2.8	2.7	2.8	3.0	2.8	2.8	(2.9)^{J}	(2.8)^{J}	2.8	[2.7]^{C}	(2.7)	(2.7)	(2.8)	2.8	2.8	2.8	2.8	2.7	2.8	2.8
5	2.9	2.9	2.9	2.9	3.0	2.9	3.2	3.3	3.1	2.8	(2.9)	2.6	2.7	2.8	2.8	2.6	2.8	2.7	2.8	3.0	2.9	2.9	(3.0)	2.8
6	2.7	2.8	3.1	2.5	2.8	2.9	3.1	2.9	3.0	(2.9)	[2.9]^{C}	(2.6)^{J}	(2.8)^{J}	2.6	2.7	2.8	C	C	C	2.8	2.9	2.8	(3.0)	2.9
7	2.8	2.7	2.6	2.8	2.9	2.9	3.0	3.2	2.8	2.9	(2.9)	2.7	(2.7)	2.8	2.7	2.6	2.8	2.8	2.7	3.0	(3.0)	3.0	(2.7)	2.7
8	(2.9)	(2.7)^{J}	2.6	2.8	2.7	3.2	3.0	[3.2]$^{C}_{K}$	[2.9]^{C}	2.8	(2.8)	(2.8)	2.5	2.7	2.5	2.8	2.8	2.7	2.8	2.8	2.8	(3.0)	(2.8)	2.8
9	2.7	2.6	(2.7)^{J}	2.8	2.7	2.9	2.9	3.0	2.8	[2.9]^{C}	(2.9)^{J}	(2.9)^{J}	2.8	(2.8)	2.6	2.8	2.7	2.7	2.7	[3.0]^{C}	2.7	(2.8)^{J}	2.8	(2.8)
10	(2.8)	2.8	2.8	3.2	(2.8)	2.7	2.7	(3.0)^{J}	3.1	2.4	(2.4)	2.6	2.5	2.7	(2.7)	[2.7]^{C}	(2.6)	[2.7]^{C}	(2.8)	2.7	2.9	[2.9]^{C}	(2.9)	(2.8)
11	2.8	2.6	2.6	2.6	(2.8)	3.0	3.1	3.2	(2.4)	(2.3)^{S}	(2.3)	2.8	2.6	(2.5)	2.7	(2.6)	(2.8)	(2.8)	2.8	[2.8]^{C}	2.8	2.6	(2.8)	2.6
12	(2.7)^{J}	2.6	2.6	2.8	(2.9)	2.9	C	C	(2.7)	(2.4)	(2.6)	(2.4)	2.5	(2.7)	(2.5)^{J}	2.6	2.6	(2.7)	2.8	2.8	(2.8)	2.7	(2.7)	2.8
13	2.7	2.6	(2.8)^{J}	(2.6)^{J}	(2.7)^{F}	3.0	3.0	3.0	(2.8)	(2.8)	[2.6]$^{S}_{A}$	(2.5)	2.5	2.6	(2.6)	2.5	2.5	2.6	2.8	2.8	2.8	(2.8)	2.7	2.8
14	2.8	2.8	2.8	2.8	2.8	3.2	(3.0)	(2.9)	3.0	2.9	2.8	(2.8)	2.8	(2.7)	(2.6)^{J}	(2.5)	(2.7)	2.8	(2.8)	(2.8)	(3.0)	(2.8)	(2.8)	2.6
15	(2.6)	2.6	2.8	(2.9)	2.7	(2.9)^{J}	(2.7)	(2.8)	2.9	(2.8)	2.7	(2.6)	(2.6)	2.5	2.5	2.6	2.5	2.6	2.6	C	C	C	C	C
16	C	C	C	C	C	C	C	C	2.7	2.8	(2.7)	(2.7)	2.9	2.6	2.7	2.6	2.6	2.7	(2.8)	(2.9)	(2.9)	(2.8)	(2.7)	(2.8)
17	(2.9)	2.8	2.8	(3.0)^{J}	2.8	3.0	3.0	(3.1)	(2.9)^{S}	(3.1)^{S}	(2.8)^{J}	(2.7)^{S}	(2.6)^{S}	2.6	(2.4)	(2.4)	(2.4)	(2.4)$^{S}_{K}$	(2.6)$^{S}_{K}$	(2.6)$^{S}_{K}$	[2.6]$^{S}_{K}$	(2.9)$^{J}_{K}$	(2.5)$^{S}_{K}$	(2.5)$^{J}_{K}$
18	(2.8)$^{S}_{K}$	(2.8)$^{J}_{K}$	(2.1)^{K}	(2.8)$^{J}_{K}$	(2.2)$^{F}_{K}$	(2.9)$^{J}_{K}$	A^{K}	A^{K}	G^{K}	A^{K}	G^{K}	A^{K}	A^{K}	A^{K}	A^{K}	G^{K}	2.1^{K}	2.2^{K}	2.5$^{F}_{K}$	2.7^{K}	2.7^{K}	(2.5)$^{J}_{K}$	2.6^{K}	2.5^{K}
19	(2.5)^{K}	2.7^{K}	(2.4)$^{J}_{K}$	(2.4)$^{F}_{K}$	(2.4)$^{F}_{K}$	(2.6)$^{F}_{K}$	(2.5)$^{F}_{K}$	2.3$^{F}_{K}$	2.2^{K}	G^{K}	G^{K}	G^{K}	A^{K}	A^{K}	2.2^{K}	2.4^{K}	[2.5]$^{A}_{K}$	2.6^{K}	2.7^{K}	2.7^{K}	2.7^{K}	2.6^{K}	(2.6)^{K}	(2.5)^{K}
20	(2.5)$^{F}_{K}$	(2.6)^{K}	(2.6)$^{F}_{K}$	(2.5)$^{F}_{K}$	2.5$^{F}_{K}$	2.6^{K}	(2.8)$^{F}_{K}$	[2.5]$^{J}_{K}$	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	A^{K}	A^{K}	2.4^{K}	2.6^{K}	2.8	(2.7)^{S}	(2.8)^{J}	(2.6)	(2.8)
21	(2.8)	(2.6)^{F}	(2.5)$^{J}_{S}$	(2.6)$^{F}_{S}$	(2.6)$^{F}_{S}$	(2.8)$^{F}_{S}$	2.7^{F}	2.6^{F}	2.5$^{F}_{K}$	2.5$^{F}_{K}$	2.1^{K}	C^{K}	G^{K}	2.3$^{F}_{K}$	(2.1)$^{J}_{K}$	2.1^{K}	2.4^{K}	(2.7)$^{F}_{K}$	(2.7)$^{F}_{K}$	(2.7)^{K}	(2.7)$^{F}_{K}$	(2.6)^{S}	(2.7)^{S}	(2.6)^{S}
22	(2.8)^{S}	2.7	(2.7)^{F}	(2.7)^{S}	(2.5)$^{F}_{S}$	(2.7)$^{F}_{S}$	2.9	(2.6)^{S}	(3.0)^{S}	(2.9)^{C}	C	C	(2.6)^{C}	2.5	2.6	(2.6)^{S}	2.4	2.8	2.6	2.7	(2.7)^{S}	(2.6)$^{J}_{S}$	(2.7)^{S}	(2.6)^{S}
23	(2.6)^{S}	2.7	2.6	2.6	(2.8)^{S}	2.5	(2.4)^{F}	2.6^{F}	2.8	2.6	B	(2.6)	2.4	2.5	2.2	2.4	(2.5)$^{F}_{S}$	2.6	2.7	2.8	(2.6)$^{F}_{S}$	(2.6)	(2.6)^{J}	2.6
24	(2.4)^{J}	(2.6)^{J}	(2.6)^{J}	(2.6)$^{J}_{S}$	2.8	2.8	3.0	3.1	(2.8)	(2.9)^{S}	(3.0)	(2.7)	2.6	2.6	(2.6)^{C}	[2.5]^{A}	2.6	2.6	2.8	2.8	(2.8)$^{E}_{C}$	(2.6)$^{S}_{C}$	(2.6)$^{E}_{S}$	(2.6)$^{J}_{S}$
25	(2.8)$^{J}_{C}$	2.6	2.7	(2.6)^{J}	(2.6)^{S}	(2.6)$^{J}_{S}$	2.8	2.8^{K}	3.2^{K}	G^{K}	2.6^{K}	C^{K}	G^{K}	2.6^{K}	2.6	[2.6]^{C}	(2.6)^{C}	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(2.6)	(2.6)	(2.7)	(2.8)^{S}	(2.8)$^{J}_{K}$	[2.8]$^{S}_{K}$	(2.6)^{K}	(2.7)$^{J}_{K}$
27	(2.6)$^{J}_{K}$	(2.6)^{K}	(2.6)$^{F}_{K}$	(2.4)^{K}	(2.8)^{K}	3.0^{K}	3.2^{K}	2.4^{K}	G^{K}	2.2^{K}	G^{K}	2.2^{K}	C^{K}	C^{K}	G^{K}	(2.6)$^{C}_{K}$	2.7^{K}	(2.8)	(2.8)^{J}	(3.0)^{C}	(3.0)^{J}	(2.6)^{C}	(2.8)^{C}	(2.8)^{C}
28	(2.9)$^{S}_{J}$	(3.0)$^{E}_{C}$	(2.8)$^{F}_{S}$	(2.7)^{E}	(2.8)^{E}	(3.0)^{F}	(3.0)$^{E}_{C}$	(3.0)^{F}	(2.8)^{S}	(2.8)^{E}	(2.8)$^{E}_{C}$	2.8	2.5	(2.5)^{S}	2.6	(2.6)$^{S}_{J}$	[2.6]^{C}	(2.6)	2.8	3.0	3.0	(2.8)^{S}	(2.6)$^{E}_{S}$	(2.6)^{S}
29	(2.6)$^{J}_{S}$	2.6	(2.8)^{J}	(3.1)^{J}	(2.8)^{S}	(3.0)^{S}	3.2	(3.4)^{S}	[3.2]^{A}	3.0	3.2	3.0	(2.8)^{S}	2.8	(2.8)$^{F}_{S}$	2.8	2.7	2.8	2.8	3.0	2.8	(2.8)$^{J}_{S}$	(2.8)^{S}	(2.8)^{S}
30	2.8	[2.7]^{A}	(2.7)	(2.6)$^{J}_{S}$	(2.6)^{S}	(3.0)^{S}	(3.4)	(3.5)^{S}	(2.9)$^{E}_{C}$	(3.0)$^{S}_{C}$	(3.0)$^{E}_{C}$	2.8	2.8	2.6	2.8	(2.8)	(2.7)	2.8	2.9	2.8	(3.0)^{S}	(2.8)$^{J}_{C}$	(2.7)$^{J}_{S}$	2.7
31	(2.8)$^{J}_{C}$	2.8	2.7	2.7	(2.7)^{C}	(2.9)$^{J}_{C}$	(3.0)^{C}	[3.1]^{A}	3.0	(3.0)	2.7	C	(B)^{C}	C	C	(2.7)$^{J}_{C}$	[2.8]$^{J}_{C}$	(2.8)$^{J}_{C}$	(2.8)^{C}	(3.0)^{C}	(2.8)^{C}	(2.8)^{C}	C	C
Median	(2.8)	2.7	2.7	(2.7)	(2.8)	2.9	3.0	(3.0)	2.8	2.8	(2.7)	(2.6)	2.6	2.6	2.6	2.6	2.6	2.7	2.8	2.8	2.8	(2.8)	(2.7)	(2.8)
Count	27	27	26	26	26	26	25	25	28	28	28	24	25	24	27	28	27	27	28	28	28	28	26	26

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 703519

Form adopted June 1946

TABLE 69

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Fl-M3000 (Characteristic), ______ (Unit), July (Month), 1947

Observed at Washington, D. C.

Lat. 39.0°N, Long. 77.5°W

75°W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., A. H. S.

Calculated by: A. H. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	(4.2)	$[3.9]^{C}$	(3.9)	C	C	(3.7)	C	C	C					
2							C	C	C	3.7	3.7	C	C	C	(3.8)	C	C	C	L					
3								C	L	C	$(3.8)^{S}$	$(3.8)^{H}$	$(3.4)^{H}$	$(3.5)^{H}$	(3.6)	$(3.8)^{H}$	L	3.6	A					
4								L	3.6	$(3.8)^{F}$	$(3.6)^{U}$	A	(3.6)	C	$(3.8)^{H}$	A	$(3.4)^{H}$	3.4	L	A				
5								Q	L	L	A	A	3.4^{H}	$(3.7)^{S}$	3.8	3.5	3.8	L	Q					
6							A	(4.3)	$(3.7)^{H}$	3.8	$[3.7]^{C}$	$(3.6)^{H}$	$(3.6)^{S}_{H}$	(3.7)	$[4.1]^{C}$	(3.6)	C	C	C					
7								3.8	(3.6)	3.7^{H}	$(3.9)^{H}$	3.9^{H}	3.9^{H}	3.9^{H}	3.7^{H}	3.7^{H}	L	(3.5)	L					
8							L	3.7^{H}	C	3.8^{H}	4.0^{H}	(4.0)	(3.6)	3.7^{F}	$[3.8]^{C}$	3.7	3.8	3.6	L					
9							L	3.9	3.7	3.6^{H}	(3.9)	$(3.9)^{H}$	(4.0)	$(3.6)^{H}$	$(3.6)^{H}_{F}$	$(3.6)^{F}$	$(3.9)^{F}$	$(3.6)^{H}$	L					
10								3.8	3.7	(3.5)	(3.6)	3.7	3.7	$(3.9)^{U}$	$(4.0)^{H}$	C	(3.8)	C	L					
11							A	A	(3.8)	(3.6)	3.6	4.0	(3.9)	3.7^{H}	$(3.6)^{S}$	(3.7)	3.6	3.5	L					
12						L	C	C	(3.8)	3.8	(3.9)	$(3.8)^{F}$	A	(3.8)	(3.8)	(3.8)	(3.9)	F	L					
13								L	A	A	$(3.8)^{H}$	A	3.8^{H}	4.3^{H}	(3.8)	(3.6)	3.3	3.8	L					
14								L	L	A	(3.8)	(3.6)	3.8	$(3.8)^{H}$	$(4.0)^{H}$	$(3.7)^{H}$	$(4.1)^{H}$	A	A					
15							L	3.4	A	(4.0)	(4.2)	3.7^{F}	3.8	3.8^{F}_{H}	3.8	3.8	(3.6)	L	L					
16							C	C	3.6	$(3.8)^{H}$	$(3.7)^{H}$	N	(4.0)	3.8	$(4.1)^{F}_{A}$	3.9^{H}	3.7^{F}	3.7	L					
17								Q	Q	$(3.5)^{S}$	3.7	3.5^{H}	$(3.7)^{H}$	$(3.5)^{C}$	$(3.8)^{S}$	$(3.6)^{C}_{B}$	3.5	$(3.3)^{S}_{K}$	$(3.3)^{S}_{K}$	Q^{K}	4.0^{K}			
18							A^{K}	A^{K}	3.7^{F}_{K}	A^{K}	$(3.9)^{K}$	A^{K}	A^{K}	A^{K}	A^{K}	3.9^{F}_{K}	$(4.0)^{K}$	4.2^{H}_{K}	3.9^{K}	L^{K}				
19							$(3.6)^{F}_{K}$	3.8^{K}	3.6^{K}	4.0^{K}	4.0^{K}	3.9^{H}_{K}	A^{K}	3.9^{K}	3.7^{K}	3.7^{K}	$[3.8]^{H}_{K}$	3.6^{K}	$(3.3)^{K}$					
20								$(3.8)^{F}_{K}$	3.8^{F}_{K}	4.0^{K}	$(4.0)^{K}$	4.1^{K}	3.5^{H}_{K}	3.7^{K}	$(3.3)^{K}$	A^{K}	A^{K}	3.7^{K}	L^{K}					
21								3.5^{H}	$(3.8)^{S}_{K}$	3.8^{F}_{K}	3.9^{K}	$[3.8]^{C}_{A}$	3.7^{H}_{K}	3.9^{K}	$(3.8)^{C}_{K}$	3.6^{H}_{K}	3.6^{K}	3.6^{F}_{K}	L^{K}					
22								L	L	A	$(4.0)^{C}$	$[4.0]^{C}$	$(4.0)^{C}$	(3.7)	3.8	L	$(3.6)^{A}$	L	L					
23							$(3.2)^{F}$	$(3.3)^{F}$	$(3.6)^{S}_{H}$	$(3.6)^{C}$	B	$(3.6)^{S}$	$(3.5)^{H}$	$(3.8)^{S}$	4.1	4.2^{H}	$(3.7)^{F}_{H}$	$(3.6)^{H}$	3.5					
24								Q	(3.8)	L	$(3.5)^{H}$	(3.7)	B	B^{C}	A^{C}	$[3.4]^{A}$	(3.6)	$(3.7)^{S}_{H}$	L					
25							3.8	3.5^{K}	$(3.7)^{C}_{K}$	$(3.6)^{S}_{K}$	$(3.8)^{H}_{K}$	3.8^{K}	3.5^{K}	3.8^{K}	$[3.7]^{C}$	$[3.6]^{C}$	$(3.6)^{C}$	C	C					
26							C	C	C	C	C	C	C	C	C	C	$(3.6)^{H}_{C}$	L	Q					
27								3.7^{K}	3.4^{K}	3.9^{K}	$(4.2)^{C}_{K}$	$(4.0)^{K}$	C^{K}	$(3.7)^{K}$	3.9^{K}	3.6^{K}	$(4.0)^{K}$	A	Q					
28								$(3.7)^{S}_{C}$	$(3.6)^{S}$	$(3.6)^{C}_{H}$	$(3.6)^{C}$	(3.8)	3.6^{H}	(3.8)	3.7	$(3.8)^{C}$	$[3.6]^{C}$	(3.6)	L					
29								L	A	L	$(4.4)^{H}$	A	4.2	A	A	$(3.6)^{A}$	L	L	Q					
30								Q	L	$(3.8)^{S}_{C}$	$(3.7)^{S}$	3.8	3.6	4.0^{H}	3.8	(4.0)	$(3.8)^{H}$	L	L					
31								A	L	L	B	C	$(B)^{C}$	C	C	C	C	C	C					
Median								3.7	3.7	3.8	3.8	3.8	3.7	3.8	3.8	3.7	3.7	3.6						
Count								13	17	20	21	22	23	23	25	24	23	16						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 70

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

E-M1500 (Characteristic), ____ (Unit), July (Month), 1947

National Bureau Of Standards (Institution)

Observed at Washington, D. C.

Lat 39.0° N, Long 77.5° W

75° W Mean Time

Scaled by: M. S. L., A.H. S.

Calculated by: A. H. S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							C	C	C	C	4.6	[4.6]^{C}	(4.8)	C	C	(4.4)^{S}	C	C	C	C				
2							C	C	C	A	4.6	C	C	C	A	C	C	C	4.7	(4.7)				
3						C	4.3	C	4.5	C	(4.7)	C	C	C	4.2	(4.3)	(5.0)	4.3	4.2					
4							A	(4.4)^{F}	4.8^{F}	(4.6)	4.7	A	A	A	A	A	(5.0)	4.8	(4.8)	4.4				
5						3.8^{F}	4.3	4.8^{F}	[4.8]^{C}	4.7^{F}	A	A	A	C	(4.7)	(4.8)	4.8	4.5	4.8					
6							4.8	5.4	4.8	4.8	C	4.7	4.7	A	A	(4.8)	C	C	C	(5.0)^{F}				
7							A	4.8^{F}	4.7^{F}	4.8^{F}	4.6^{F}	A	4.6	A	(4.7)	4.3	4.5	5.0	4.6	4.5				
8							5.2	5.0^{F}	C	5.0	4.6	(4.7)	(5.3)^{F}	(4.5)	(4.7)	(4.6)	4.7	4.5	4.6^{F}	4.7^{F}				
9							(4.7)^{F}	(5.0)^{F}	4.7	4.5	(4.2)	(4.6)	(4.5)	5.1	4.6	4.4^{F}	4.7^{F}	4.7	4.5^{F}	[4.5]^{F}				
10							4.6^{F}	4.3^{F}	4.8^{F}	(4.6)	(4.6)	A	4.6^{F}	(4.6)	(4.6)	C	A	[4.8]^{C}	(4.2)					
11							A	4.8	A	A	(5.0)	(4.3)	(5.0)	4.5	4.5	4.4	4.3	A	4.4	(4.6)^{S}				
12						(5.0)	C	C	C	4.7	4.	A	4.5	4.8	(4.7)	4.7	A	A	(5.4)^{A}	(4.8)				
13							(4.8)	4.6	(4.8)	5.0	A	A	A	A	(4.7)	4.7	(4.7)	A	A	4 7^{S}				
14							A	4.8	4.2	A	(4.0)^{A}	A	(4.8)	A	(4.6)	4.5	(4.5)	4.4	4.5^{F}	A				
15							4.8	4.5^{F}	4.7	(4.7)	A	(4.7)	(4.4)	A	A	A	4.6	A	4.4	C				
16							C	C	4.4	4.3	(4.6)	4.4	4.5	4.6	A	A	4.6^{F}	4.5	4.6^{F}	4.5^{F}				
17						(4.7)$^{S}_{F}$	4.2^{F}	5.0^{A}	4.6	(4.3)^{F}	(4.7)^{S}	(4.5)^{S}	A	A	A	B	S	A^{K}	4.8^{K}	4.7$^{F}_{K}$				
18							4.5$^{F}_{K}$	(4.6)$^{A}_{K}$	4.5$^{A}_{K}$	A^{K}	A^{K}	A^{K}	A^{K}	A^{K}	A^{K}	A^{K}	A^{K}	(4.7)$^{A}_{K}$	4.3^{K}	(5.0)$^{A}_{K}$				
19							4.3$^{F}_{K}$	4.5^{K}	A^{K}	A^{K}	A^{K}	A^{K}	A^{K}	A^{K}	(4.6)^{K}	4.5^{K}	4.5^{K}	4.7^{K}	4.7$^{F}_{K}$	A^{K}				
20						4.4$^{F}_{K}$	4.6^{K}	(4.6)^{K}	5.0$^{F}_{K}$	(4.8)$^{A}_{K}$	(4.5)^{K}	(4.5)$^{S}_{K}$	(4.2)^{K}	(4.2)^{K}	(4.2)$^{S}_{K}$	(4.4)$^{S}_{K}$	4.3^{K}	4.6^{K}	4.6$^{F}_{K}$	4.7$^{F}_{S}$				
21							5.0	4.6	(4.7)$^{A}_{K}$	A^{K}	A^{K}	C^{K}	(4.8)^{K}	(4.8)^{K}	4.8^{K}	(5.0)$^{S}_{K}$	(4.6)$^{S}_{K}$	4.3^{K}	4.4^{K}	4.3^{K}				
22						3.8^{F}	4.6	4.5	4.4	4.5	C	C	(4.4)^{C}	(4.4)	A	A	(4.4)	4.5	4.8^{A}	(4.5).				
23						A^{F}	4.6^{F}	4.2^{F}	4.6	A	B	(4.6)	(4.6)^{A}	(4.5)	(4.5)	(4.6)^{C}	4.6	4.7	4.6	5.0				
24							4.6	4.6	(4.4)	4.6	4.5	5.2	B	(4.8)^{B}	(4.6)	(4.5)^{A}	(4.7)	(4.8)	(4.3)^{F}	(4.7)^{F}				
25							(4.8)^{F}	4.6^{K}	5.0^{K}	(4.8)^{K}	4.8^{K}	4.8^{K}	(4.5)$^{F}_{K}$	[4.7]$^{A}_{K}$	(4.8)	C	(4.6)^{C}	C	C	C				
26							C	C	C	C	C	C	C	C	C	C	C	4.5	4.4					
27						4.7$^{F}_{K}$	4.8$^{F}_{K}$	4.8^{K}	5.0$^{F}_{K}$	4.8^{K}	(4.8)^{K}	A^{K}	C^{K}	(4.8)^{K}	4.4^{K}	4.6^{K}	4.4^{K}	A	A					
28							A	(4.6)^{A}	A	(4.7)^{C}	[4.8]^{C}	(4.6)	(4.4)	(4.6)^{S}	4.4^{F}	(4.3)^{F}	[4.4]^{C}	4.6^{F}	(4.6)					
29							(5.2)^{F}	(5.0)^{A}	A	4.6^{F}	(4.6)^{A}	(4.9)^{A}	(4.8)^{A}	(4.5)^{A}	(4.6)^{A}	(4.8)^{A}	A	A	A^{F}					
30							A	(5.0)^{A}	A	A	(4.6)^{F}	(5.0)	(4.5)^{H}	B	(4.6)^{F}	4.5	4.6	4.5	4.6	4.2				
31							5.0	A	(5.0)	A	B	C	(B)^{C}	C	C	(A)^{C}	(A)^{C}	(A)^{C}	(4.8)^{C}	(5.0)^{C}				
Median						4.6	4.6	4.6	4.7	4.7	(4.6)	(4.6)	(4.6)	(4.6)	(4.6)	(4.5)	4.6	4.6	4.6	4.7				
Count						6	20	24	21	19	20	15	19	15	20	20	21	19	25	19				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 702519

Table 71

Ionospheric Storminess at Washington, D.C., July 1947

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	***	2			3	3
2	***	***			3	3
3	***	2			2	2
4	1	2			1	1
5	1	2			1	1
6	1	2			2	2
7	1	2			2	2
8	1	1			2	3
9	2	2			2	3
10	0	1			3	3
11	3	1			2	3
12	1	3			2	3
13	1	2			3	2
14	0	2			1	2
15	2	2			2	2
16	***	1			2	1
17	0	3	2200	----/	1	5
18	4	***	----	----	5	5
19	4	5	----	----	4	3
20	4	5	----	2400	4	4
21	1	6	1300	----	3	2
22	1	2	----	0200	2	3
23	1	3			4	4
24	2	2			3	3
25	1	4	1200	1900	3	3
26	***	***			4	3
27	3	6	0100	2200	3	3
28	2	2			3	2
29	1	1			3	2
30	2	1			2	2
31	1	***			2	3

*Ionospheric character figure (I-figure) for ionospheric storminess at Washington, D.C., during 12-hour period on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, magnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

***No readable record. Refer to table 60 for detailed explanation.

/Dashes indicate continuing storm.

Table 72

Sudden Ionosphere Disturbances Observed at Washington, D. C.

1947 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
July					
2	1524	1540	Ohio, D.C., England, Ontario	0.1	
23	1422	1540	Ohio, D.C., England, Ontario	0.0	
23	1746	1840	Ohio, D.C., Ontario	0.1	
24	1223	1240	Ohio, D.C., Ontario	0.1	
24	1658	1855	Ohio, D.C., Ontario	0.0	
24	2140	2200	Ohio, D.C., Mexico, Ontario	0.2	
25	1600	1640	Ohio, D.C., New Brunswick, Ontario	0.0	
29	1532	1550	Ohio, D.C., England, New Brunswick, Ontario	0.03	
29	1947	***	Ohio, D.C., England, New Brunswick, Ontario	0.03	
29	2015	2040	Ohio, D.C., England, New Brunswick, Ontario	0.0	
29	2116	***	Ohio, D.C., Ontario	0.1	
29	2143	2210	Ohio, D.C., Ontario	0.05	
30	1144	1210	England	0.02	
30	1748	1820	Ohio, D.C., England, New Brunswick, Ontario	0.0	
31	1436	1555	Ohio, D.C., England, New Brunswick, Ontario	0.0	
31	1840	1940	D.C., England, New Brunswick	0.0	Terr.mag.pulse** 1840-1900
31	2004	2045	D.C., England, New Brunswick	0.01	Terr.mag.pulse** 2005-2010

*Ratio of received field intensity during SID to average field intensity before and after, for station W8XAL, 6080 kilocycles, 600 kilometers distant, for all SID except the following: Station GLH, 13525 kilocycles, received in New York, 5340 kilometers distant, was used for the SID on July 30 at 1144 and on July 31.
**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.
***Incomplete recovery of SID.

Table 73

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Observed in England

1947 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters
June 8	1455	1510	Brentwood	Bulgaria, Spain, U.S.S.R., Yugoslavia
11	0910	0930	Brentwood	Austria, Belgian Congo, Greece, India, Iran, Kenya, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R., Yugoslavia
14	1030	1215	Brentwood	Austria, Belgian Congo, Bulgaria, Canary Is., Chile, Greece, India, Iran, Kenya, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, Uruguay, U.S.S.R., Yugoslavia, Zanzibar
14	1037	1210	Somerton	Argentina, Australia, Barbados, Brazil, Canada, Ceylon, China, Egypt, Gold Coast, India, New York, Nigeria, Union of S. Africa
15	0700	0730	Brentwood	Austria, Belgian Congo, Bulgaria, French Equatorial Africa, India, Iran, Kenya, Southern Rhodesia, Syria, U.S.S.R., Zanzibar
15	0700	0730	Somerton	Ceylon, China, India
15	0915	0945	Brentwood	India, Iran, Southern Rhodesia, Spain, Syria, U.S.S.R., Zanzibar
20	1220	1315	Brentwood	Austria, Bahrein I., Belgian Congo, Bulgaria, Chile, Colombia, Iran, Kenya, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R., Zanzibar
23	1215	1340	Brentwood	Austria, Canary Is., Greece, Spain, Switzerland, U.S.S.R., Yugoslavia
July 14	1102	1155	Brentwood	Belgian Congo, Canary Is., Greece, India, Iran, Kenya, Portugal, Spain, Switzerland, Syria, Turkey, Uruguay, U.S.S.R., Zanzibar
17	1040	1100	Brentwood	Bahrein I., Greece, Iran, Kenya, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey
22	0930	1030	Brentwood	Austria, Belgian Congo, Canary Is., Greece, India, Kenya, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R., Zanzibar

Note—Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances, for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Table 74

Provisional Radio Propagation Quality Figures
(Including Comparisons with CRPL Warnings and CRPL Probable Disturbed Period Forecasts)
June 1947

Day	North Atlantic: Quality figure 01-12 GCT	North Atlantic: Quality figure 13-24 GCT	North Atlantic: CRPL* Warning 01-12 GCT	North Atlantic: CRPL* Warning 13-24 GCT	North Atlantic: CRPL** probable disturbed period forecast	North Atlantic: Geomagnetic K_{CH} 01-12 GCT	North Atlantic: Geomagnetic K_{CH} 13-24 GCT	North Pacific: Quality figure 01-12 GCT	North Pacific: Quality figure 13-24 GCT	North Pacific: CRPL* Warning 01-12 GCT	North Pacific: CRPL* Warning 13-24 GCT	North Pacific: CRPL** probable disturbed period forecast	North Pacific: Geomagnetic K_{CH} 01-12 GCT	North Pacific: Geomagnetic K_{CH} 13-24 GCT
1	5	5				4	2	6	8				4	2
2	7	6				1	1	8	8				1	1
3	5	6				3	2	7	(4)				3	2
4	6	7			X	2	2	7	(4)			X	2	2
5	5	5			X	4	4	8	(4)			X	4	4
6	6	6			X	2	1	7	(4)			X	2	1
7	7	6				3	4	7	8				3	4
8	5	5				3	3	6	7				3	3
9	6	6	X	X		4	3	7	6	X	X		4	3
10	6	6			X	2	2	7	(4)			X	2	2
11	6	6			X	2	3	7	8			X	2	3
12	7	6			X	2	2	8	6			X	2	2
13	6	6			X	3	4	8	5			X	3	4
14	(4)	(4)		X		6	4	8	8		X		6	4
15	5	5	X	X		4	3	6	6	X	X		4	3
16	7	6				2	3	8	8				2	3
17	5	(4)	X	X		4	4	5	6	X	X		4	4
18	5	5	X	X		3	2	5	6	X	X		3	2
19	6	5				3	3	6	7				3	3
20	6	6				3	2	6	6				3	2
21	7	6			X	2	2	7	6			X	2	2
22	6	6			X	3	3	6	(4)			X	3	3
23	6	5			X	3	3	6	5			X	3	3
24	6	5				3	3	6	(4)				3	3
25	(4)	(4)				4	3	7	7				4	3
26	6	5				3	3	7	6				3	3
27	6	6				2	2	8	6				2	2
28	7	6				3	2	8	8				3	2
29	7	6				2	2	8	-				2	2
30	5	6				3	2	8	8				3	2
Score:														
H			2		0					0		5		
M			1		3					7		2		
G			24		17					18		18		
(S)			2		2					2		2		
S			1		8					3		3		

*Broadcast on WWV, Washington, D.C. Times of warnings recorded to nearest half day as broadcast.

**In addition to dates marked X, the following was designated as a probable disturbed day on forecasts more than eight days in advance of said date: June 20.

Quality Figure Scale:
- 1 - Useless
- 2 - Very poor
- 3 - Poor
- 4 - Poor to fair
- 5 - Fair
- 6 - Fair to good
- 7 - Good
- 8 - Very good
- 9 - Excellent

Symbols:
- X Warning given or probable disturbed date
- H Quality 4 or worse on day or half day of warning
- M Quality 4 or worse on day or half day of no warning
- G Quality 5 or better on day of no warning
- (S) Quality 5 on day of warning
- S Quality 6 or better on day of warning
- ( ) Quality 4 or worse (disturbed)

Geomagnetic K_{CH} on the standard score of 0 to 9, 9 representing the greatest disturbance

Table 75

CORONAL OBSERVATIONS AT CLIMAX, COLORADO

July 1947

First row - green line 5303A
Second row - red line 6374A
Third row - red line 6704A

Date	Time of observation GCT	Degrees from astronomical north																																			
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175
1	1452-1521	5	5	--	--	--	--	--	--	--	--	--	5	10	33	23	18	9	5	5	6	10	15	12	12	11	9	6	--	--	--	--	--	5	8	9	9
											2	1	1	7	5	10	6		1	1		1	1	1													
													2	3	5	4	3	2	2	1	1	2	2	2	1	1											
2	1521-1555	10	10	8	--	--	--	--	--	--	--	8	13	19	21	17	16	13	10	10	11	13	14	20	16	14	--	--	--	--	--	--	--	--	--	--	--
											1	1	1	1	2	3	5	1																			
												2	2	3	4	4	4	3	2	2	2	3	3	3	1	1	1										
5	1400-1422	-	-	--	--	--	--	--	--	--	--	--	--	11	10	13	12	11	9	9	9	11	13	13	12	10	8	--	--	--	--	--	--	--	--	--	--
														2	2	2	3	5	2	2	7	4	1	3	2	1											
8	1421-1457	-	-	--	--	--	--	--	--	--	8	8	9	11	13	14	20	24	15	13	12	12	12	12	12	14	13	11	8	--	--	--	--	--	--	--	--
															8	10	2	11	7	9	11	9	9	8	6	4	3	3	2	2	1						
9	1452-1503	7	8	7	6	--	--	--	--	--	8	8	9	11	16	19	21	21	17	14	12	11	9	9	13	12	13	12	7	--	--	--	--	--	--	--	--
														1	5	3	1	2	2		3	5	8	14	6	5	5	6	1	1	1						
10	1419-1443	-	-	--	--	--	--	--	--	--	--	--	10	14	18	17	15	15	14	13	11	4	12	14	13	12	11	12	7	--	--	--	--	--	--	--	--
											1	2	2	3	4	4	3	3	2	1	1	5	5	10	9	2	2	3	3	3	2	1	1				
													1	2	2	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1							
11	1419-1443	-	-	--	--	--	--	--	--	--	--	--	--	--	12	16	15	14	14	13	13	12	13	14	12	12	--	--	--	--	--	--	--	--	--	--	--
												1	2	2	3	2	3	3	2	2	2	2	2	4	4	3	2	1									
											1	1	1	1	2	4	4	4	4	3	3	2	1	1	1	1	1	1	1	1							
12	1402-1423	-	-	--	--	--	--	--	--	--	--	--	11	11	20	18	17	16	15	12	9	11	13	20	14	12	10	10	--	--	--	--	--	--	--	--	--
														3	4	3	3	3	2	2	1	1	2	9	10	10	4	11	1	1	1	1					
										1	2	2	2	2	3	3	2	2	2	2	2	2	2	1	2	2	1										
17	[1749-1956] [1756-2010]	-	-	--	--	--	--	--	--	--	--	--	--	8	10	10	10	8	7	--	--	9	10	11	12	11	10	9	8	--	--	--	--	--	--	--	--
																						1	3	5	4	2	1	1	1								
19	[1549-1623] [1823-1855]	6	8	9	8	6	4	4	4	3	4	5	4	4	11	15	14	19	12	7	9	12	33	34	35	28	22	13	9	7	4	3	4	4	5	5	5
														1	1	1	1	2	7	1		1	5	4	6	2	4	4	2				1	1			
																							2	2	2	1	1										
20	1424-1443	-	-	--	--	--	--	--	--	--	--	--	--	--	--	10	11	13	14	8	--	--	13	28	20	17	16	11	8	--	--	--	--	--	--	--	--
														1	1	1	2	3	8	1			1	4	3	2	2	2	1	1	1	1	1	1	1		
																				1	1	2	2	3	3	3	4	3		1	1	2	2	1	1		
24	1344-1411	-	-	--	--	--	--	--	--	--	--	--	--	--	5	8	8	14	20	15	13	7	4	5	15	19	19	13	14	13	12	13	13	--	--	--	6
													1	1	1	1	7	9	4	3	4	1	1	2	4	2	10	3	2	3	4						
																1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
25	1428-1450	-	-	--	--	--	--	--	--	--	--	--	--	--	--	9	10	14	13	14	10	--	--	--	13	14	15	12	10	9	8	--	--	--	--	--	10
										1	1	1	2	2	1	1	1	2	2	2	1	1	1	1	1	11	9	8	12	3	4	2	1						
26	1440-1529	8	10	10	8	--	--	--	--	--	--	--	--	--	19	13	12	12	16	14	10	9	8	8	16	15	15	13	14	14	--	--	--	--	--	--	5
									1	1	1	1	2	2	2	3	3	6	1	1	1	1	2	3	3	3	3	3	4	2	2	1					
											1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1				
27	1458-1604	9	8	7	6	--	--	--	--	--	--	--	--	8	10	17	16	27	12	10	10	9	8	8	14	16	14	14	13	13	11	8	5	--	--	--	6
														1	1	2	4	15	1					1	1	2	1	1	2	3	2						
															1	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2	1	1					
28	1457-1539	-	-	--	--	--	--	--	--	--	--	--	--	7	10	15	17	24	24	17	10	11	9	10	14	27	18	14	14	13	5	--	--	--	--	--	5
																	2	3	5						1	5	1	1									
											1	1	1	2	2	3	3	2	2	1	1	1	1	1	2	2	1	1	1	1	1	1					
29	1529-1629	-	-	--	--	--	--	--	--	--	--	--	--	8	12	13	14	16	15	13	10	9	11	13	15	14	17	12	10	10	--	--	--	--	--	4	4
							1	1	1	1	1	1		1	2	2	2	3	3	2	2	1															
															1	1	2	2	1	1	1	2	2	2	2	2	2	2	1								
31	1510-1535	-	-	--	--	--	--	--	--	--	--	--	--	--	7	11	13	13	12	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																	

Table 75 (continued)

Date	Time of observation GCT	Degrees from astronomical north																																			
		180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
1	1452-1521	9	9	7	--	--	--	--	--	--	--	--	8	12	16	14	15	14	18	15	11	12	18	22	28	26	15	--	5	7	8	9	8	8	8	9	9
											1	1	2	3	4	13	1	1	1			1	12	10	10	4											
												1	1	1	1	2	2	2	3	2	1	2	2	3	3	3	2	1									
2	1521-1555	--	--	--	--	--	--	--	--	--	10	12	14	13	13	13	11	14	13	13	10	10	13	17	14	12	10	9	--	--	--	--	--	--	--	--	--
											1	2	2	8	7	12							10	9	10	3	2	1									
										1	1	2	2	2	2	1	1	1	1	2	2	1	1	1	1												
5	1400-1422	--	--	--	--	--	--	--	--	--	--	--	10	12	13	25	18	15	14	10	--	14	14	14	14	13	9	--	--	--	--	--	--	--	--	--	--
													5	10		4	2	9	2	2	1	1	3	2	1	2	1										
												1	2	3	3	3	2	2	1	1	1	1	1	1													
8	1421-1457	--	8	9	10	8	--	--	--	8	8	10	17	13	15	15	18	12	11	8	8	12	15	15	10	--	--	--	--	--	--	--	--	--	--	--	--
											1	5	1	4	2	2	3			1	4	12	1														
9	No observation																																				
10	1419-1443	--	8	9	10	9	8	--	--	9	10	9	13	14	17	14	17	8	--	--	9	12	18	19	12	--	--	--	--	--	--	--	--	--	--	--	--
											1	1	2	1	3	3	1	1	1	1		1	4	12	14	4	3	1									
									1	2	2	1	1	1	2	2	2	1			1	1	1	1	1												
11	1419-1443	--	--	--	--	--	--	--	--	--	--	--	13	15	14	19	16	12	--	--	--	15	16	14	13	11	--	--	--	--	--	--	--	--	--	--	--
												1	2	3	10	5	11		1	1	1	1	2	5	5	4	2	1	1								
		1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1										
12	1402-1423	--	--	--	--	--	--	--	--	--	--	--	9	15	14	13	19	14	11	--	--	8	13	18	17	17	14	11	--	--	--	--	--	--	--	--	--
												1	5	7	4	3	8	12	2	1	1			5	10	7	3	2	2								
17	[1749-1956 1756-2010]	--	--	--	--	--	--	--	--	--	8	9	10	11	12	10	11	9	9	11	12	14	12	10	8	--	--	--	--	--	--	--	--	--	--	--	--
																				1	4	2	1														
19	[1549-1623 1823-1855]	5	8	9	10	8	4	3	3	3	3	5	10	11	10	14	20	27	27	25	20	17	22	27	18	15	17	16	11	9	4	3	2	--	3	3	4
										1	1	1		1	2	2	2	1	2	3		4	7	5	2	1											
20	No observation																																				
24	1344-1411	13	13	8	--	--	--	--	--	--	--	--	14	27	19	17	12	12	12	12	10	15	24	22	22	22	24	32	21	11	9	8	6	--	--	--	--
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														1	2	2	1					1	2	4	4	4	3	3	2	1							
25	1428-1450	11	9	8	--	--	--	--	--	--	--	--	10	12	17	15	13	13	13	12	12	14	13	18	22	25	23	25	15	11	8	--	--	--	--	--	--
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28	1457-1539	8	11	11	8	--	--	--	--	--	--	--	--	8	8	10	15	12	--	14	15	14	14	15	17	18	17	23	8	--	--	--	--	--	--	--	--
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31	1510-1535	9	9	10	--	--	--	--	--	--	--	--	--	10	13	8	9	22	21	18	14	--	--	7	14	16	14	14	15	12	--	--	--	--	--	--	--
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		1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1			1	1	1	1	1								

Table 76

American and Zürich Provisional Relative Sunspot Numbers

July 1947

Date	American* No.	Zürich** No.	Date	American* No.	Zürich** No.
1	172	140	16	198	210
2	143	125	17	186	213
3	135	167	18	204	179
4	142	155	19	199	228
5	134	147	20	199	212
6	141	160	21	221	225
7	140	177	22	151	214
8	130	131	23	150	195
9	200	160	24	166	179
10	175	165	25	174	147
11	138	144	26	168	151
12	148	145	27	149	128
13	186	180	28	131	130
14	194	210	29	131	122
15	182	220	30	143	121
			31	135	146
No. Days: 31			Monthly Means:	163.4	168.6

*Median of data from 17 observers.

**Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

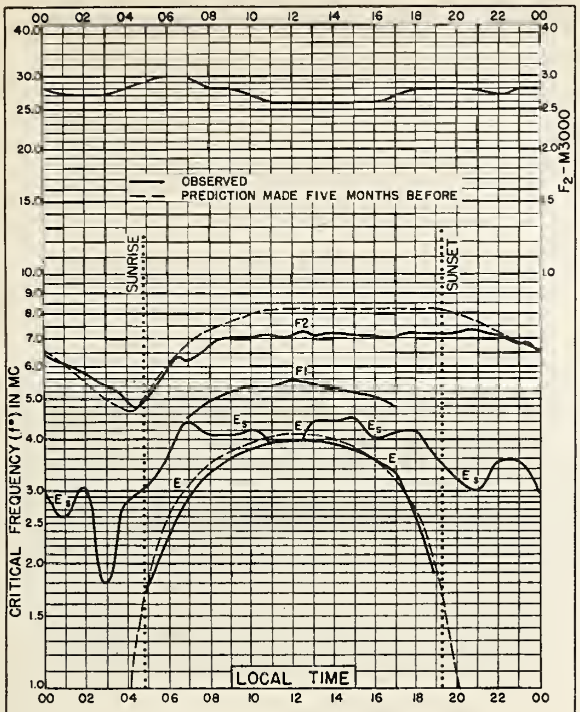

Fig. 1. WASHINGTON, D.C.
39.0°N, 77.5°W JULY 1947

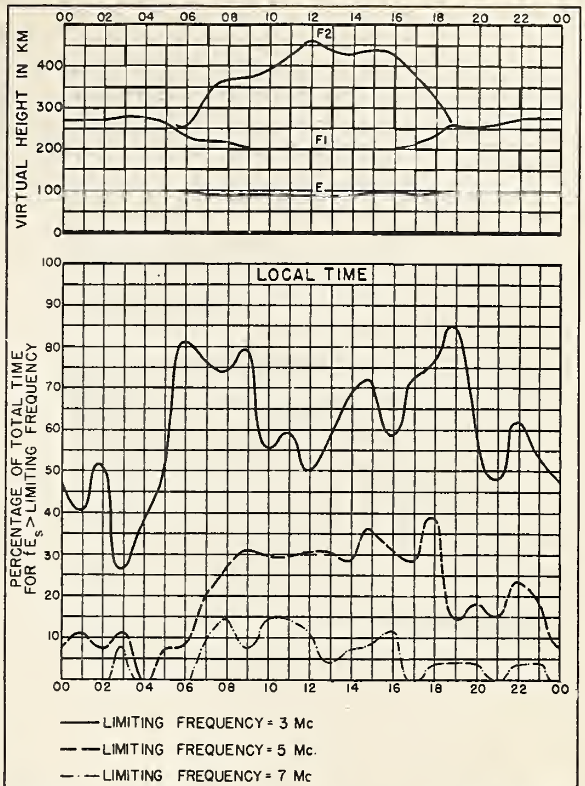

Fig. 2. WASHINGTON, D.C. JULY 1947

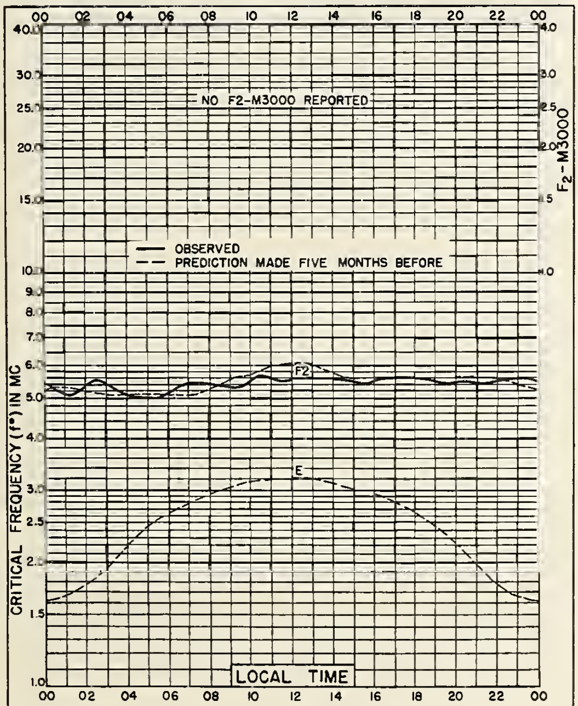

Fig. 3. CLYDE, BAFFIN I.
70.5°N, 68.6°W JUNE 1947

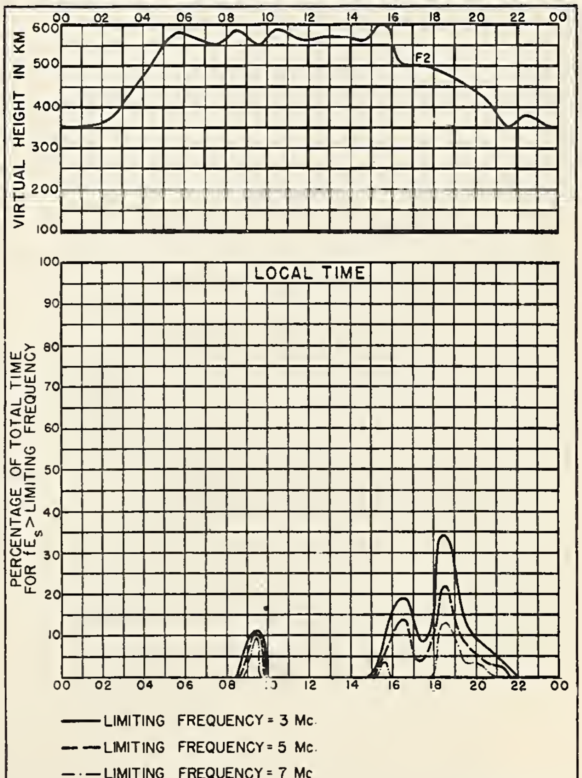

Fig. 4. CLYDE, BAFFIN I. JUNE 1947

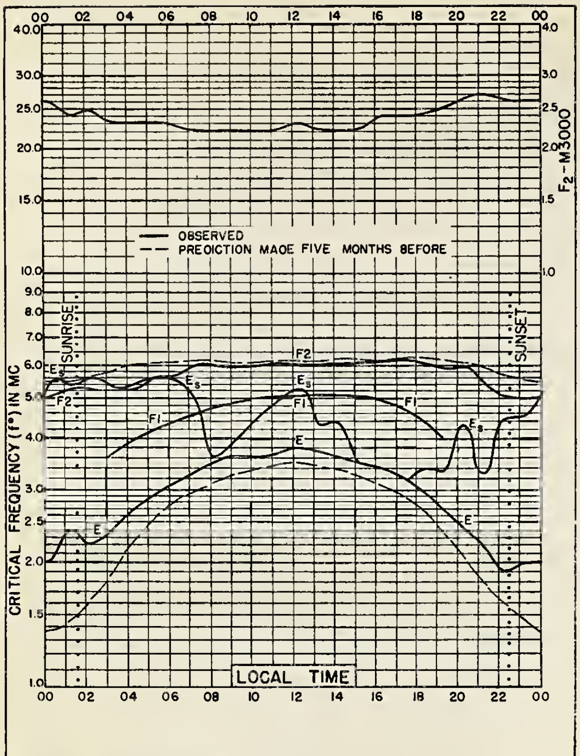

Fig. 5. FAIRBANKS, ALASKA
64.9°N, 147.8°W JUNE 1947

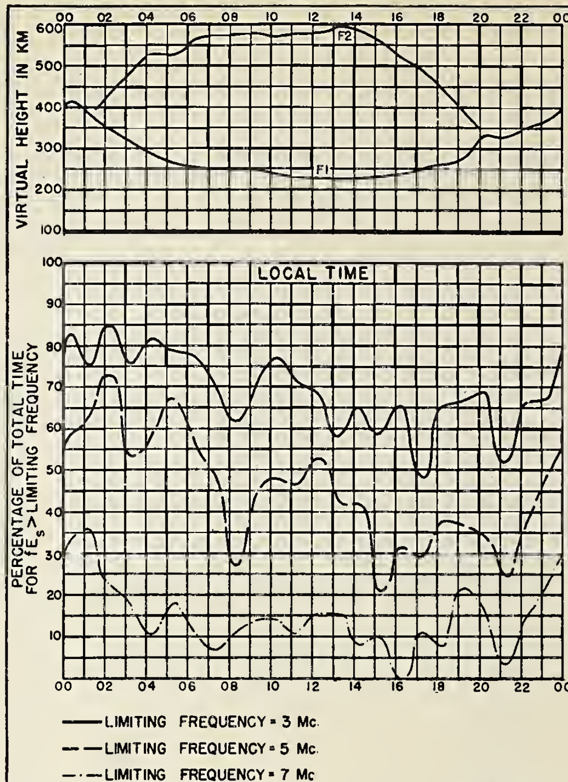

Fig. 6. FAIRBANKS, ALASKA JUNE 1947

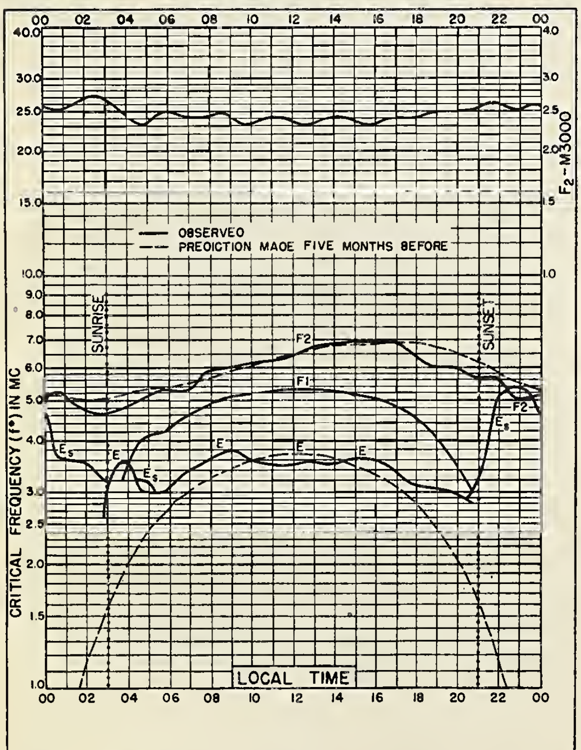

Fig. 7. CHURCHILL, CANADA
58.8°N, 94.2°W JUNE 1947

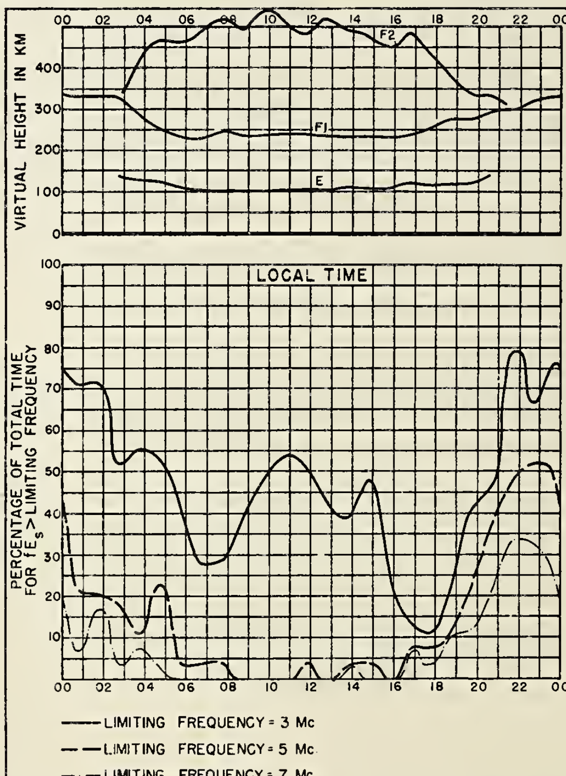

Fig. 8. CHURCHILL, CANADA JUNE 1947

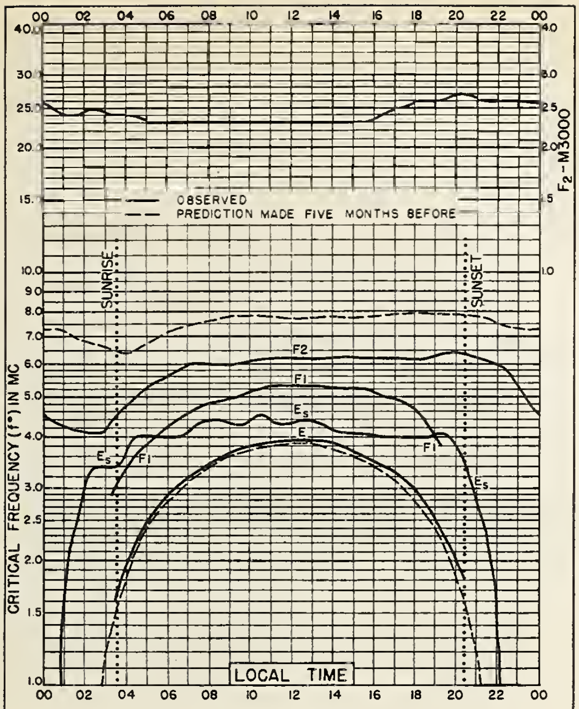

Fig. 9. PRINCE RUPERT, CANADA
54.3°N, 130.3°W JUNE 1947

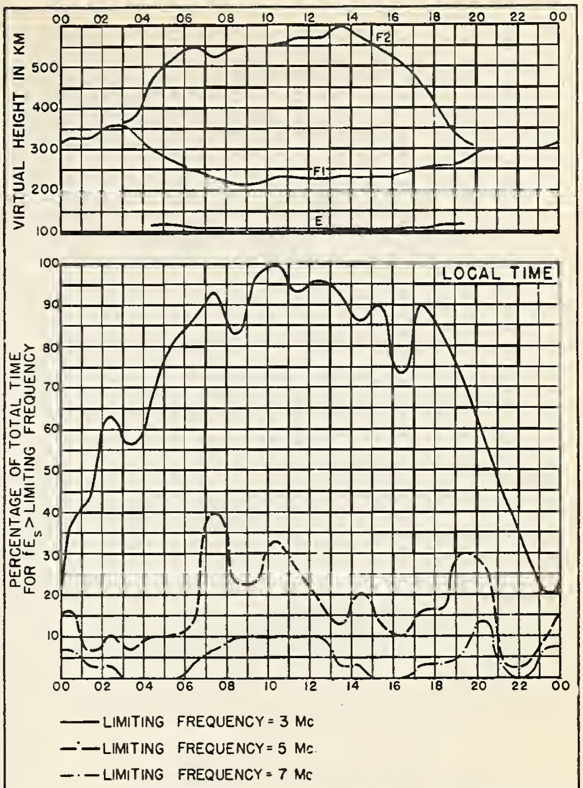

Fig. 10. PRINCE RUPERT, CANADA JUNE 1947

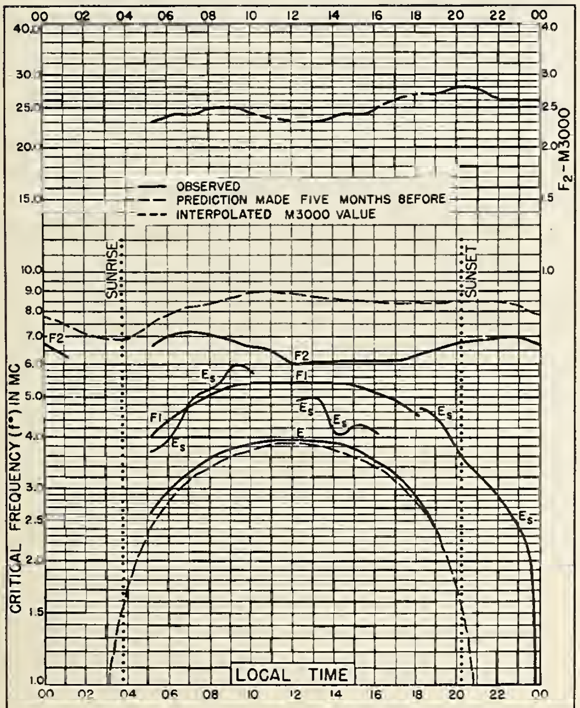

Fig. 11. ADAK, ALASKA
51.9°N, 176.6°W JUNE 1947

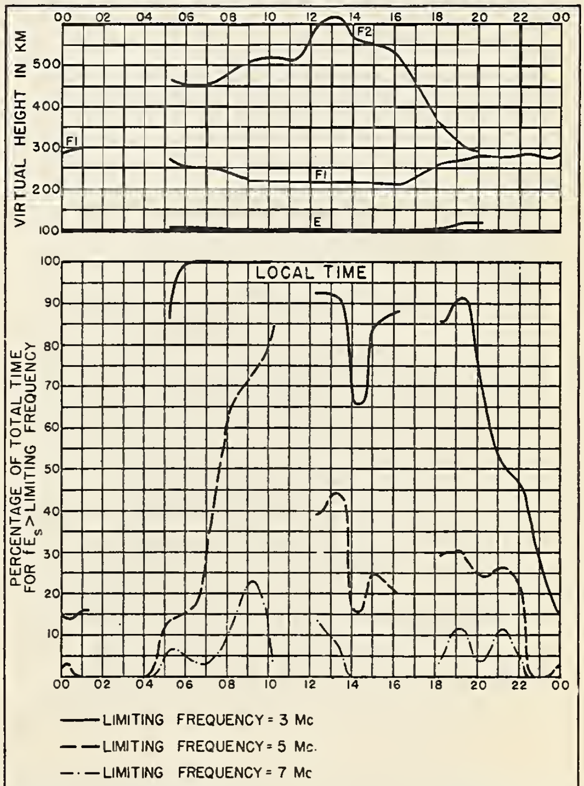

Fig. 12. ADAK, ALASKA JUNE 1947

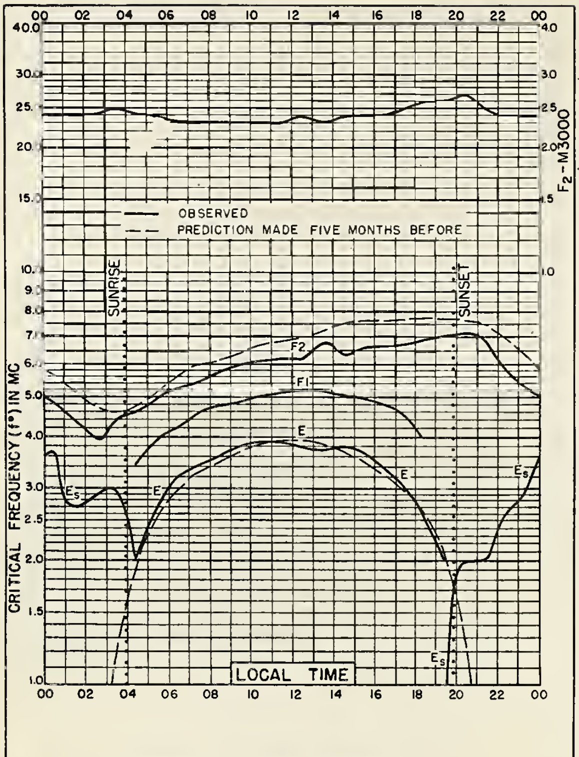

Fig. 13. PORTAGE la PRAIRIE, MANITOBA 49.9°N, 98.3°W JUNE 1947

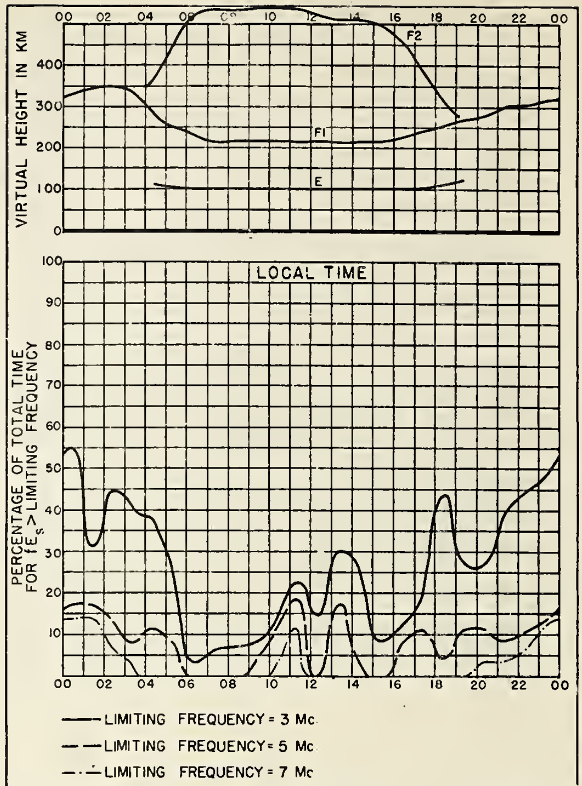

Fig. 14. PORTAGE la PRAIRIE, MANITOBA JUNE 1947

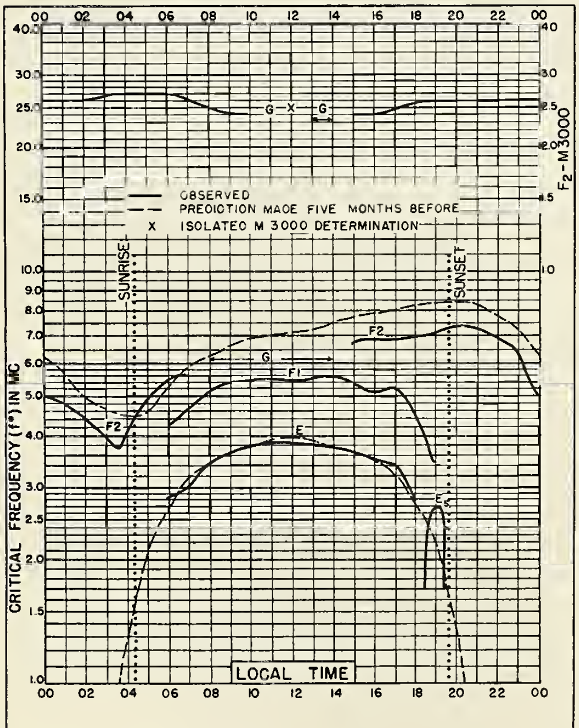

Fig. 15. OTTAWA, CANADA 45.5°N, 75.8°W JUNE 1947

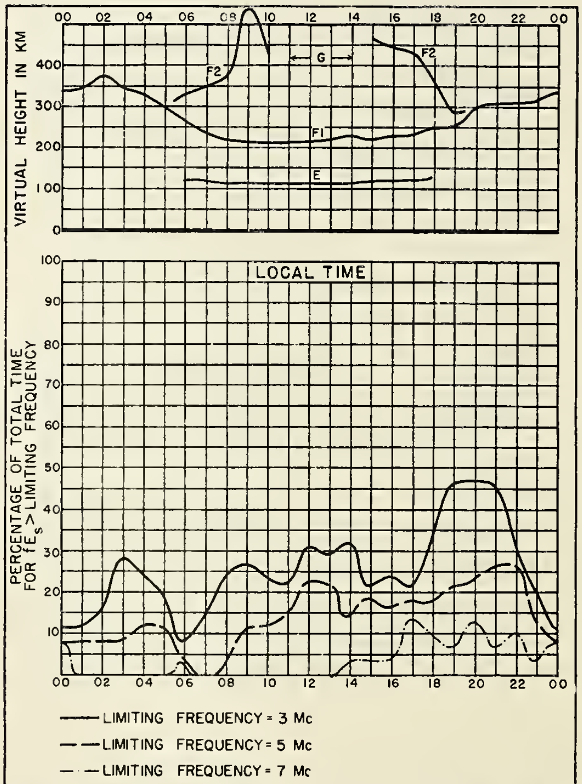

Fig. 16. OTTAWA, CANADA JUNE 1947

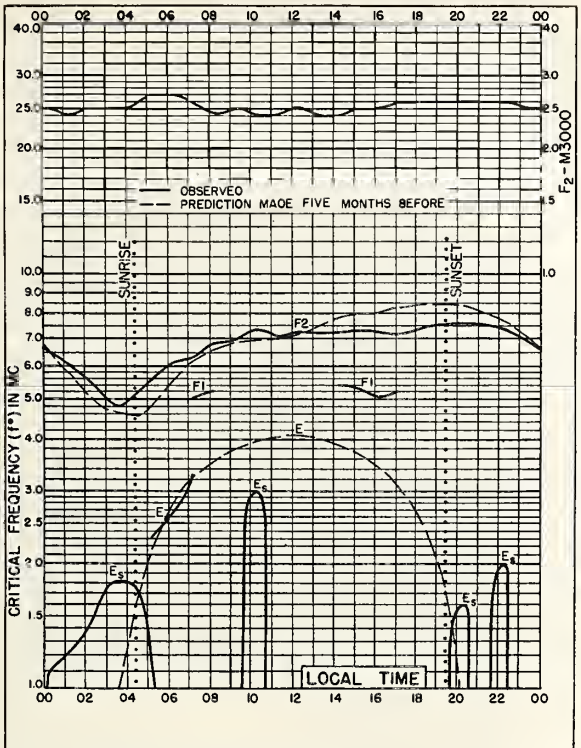

Fig. 17. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W JUNE 1947

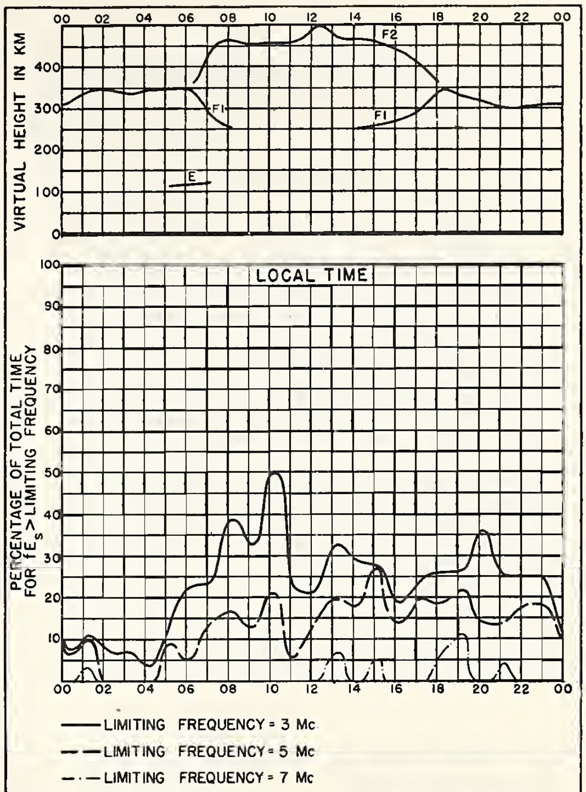

Fig. 18. BOSTON, MASSACHUSETTS JUNE 1947

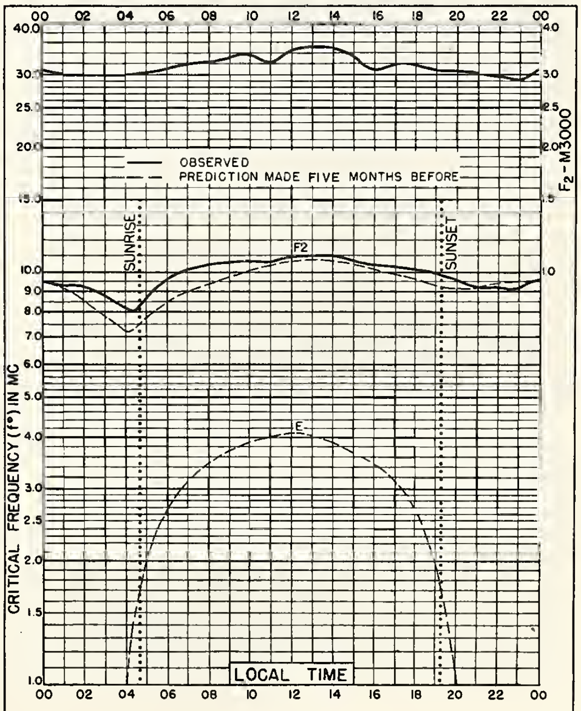

Fig. 19. PEIPING, CHINA
39.9°N, 116.4°E JUNE 1947

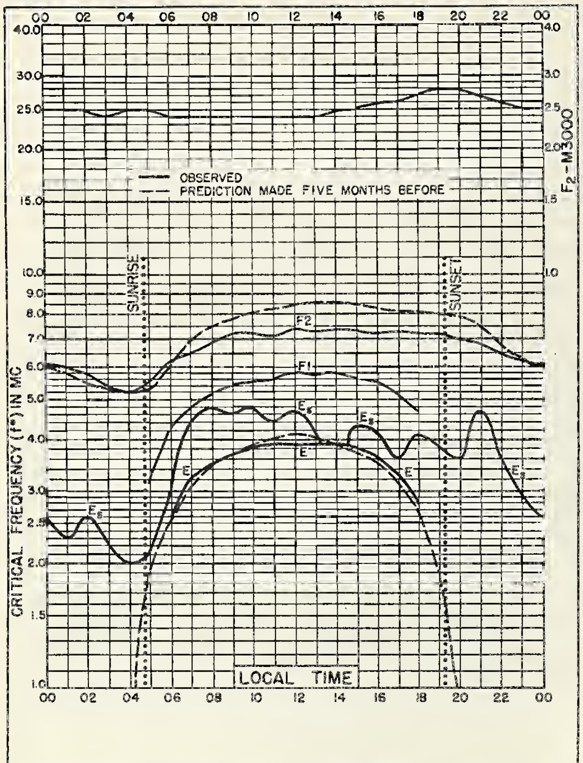

Fig. 20. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JUNE 1947

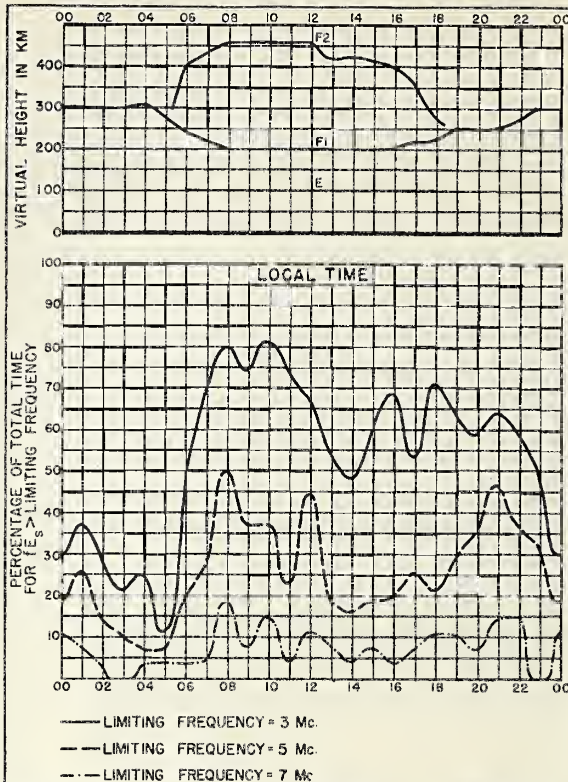

Fig. 21. SAN FRANCISCO, CALIFORNIA JUNE 1947

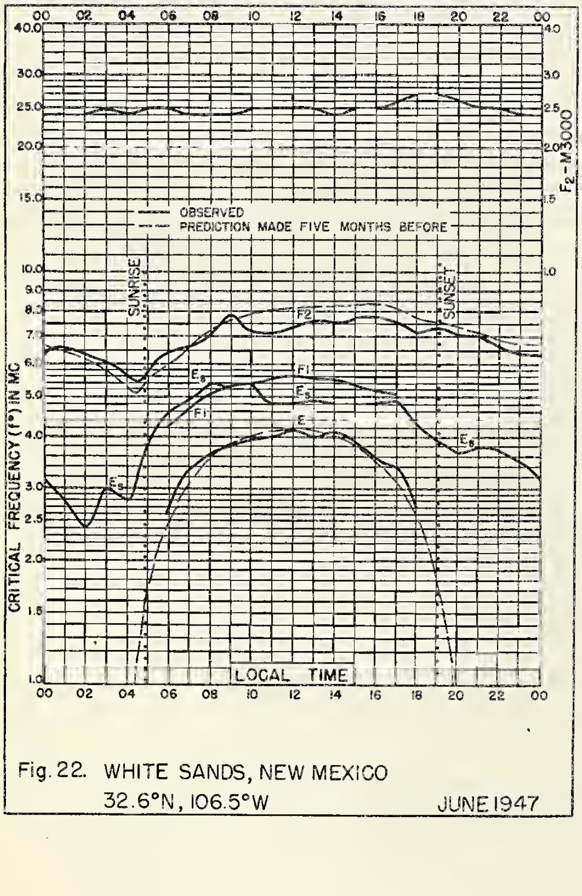

Fig. 22. WHITE SANDS, NEW MEXICO
32.6°N, 106.5°W JUNE 1947

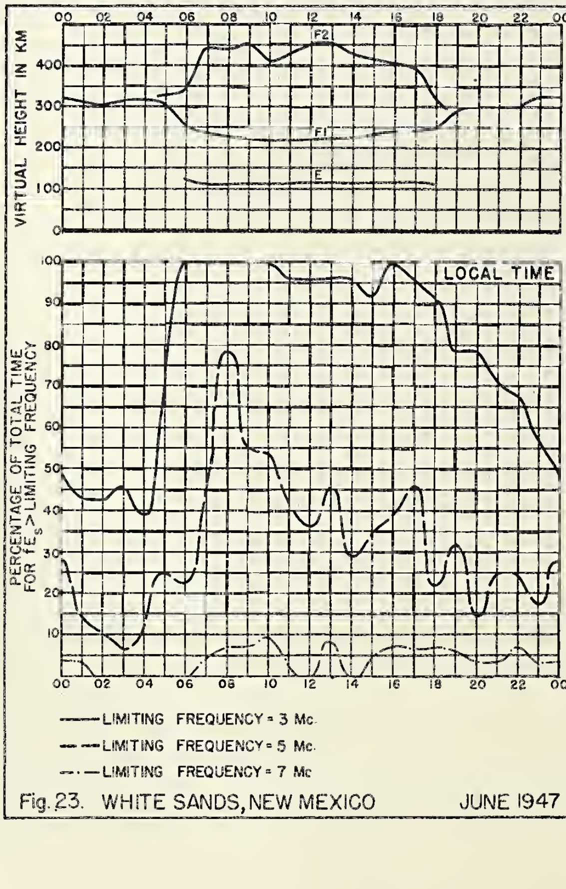

Fig. 23. WHITE SANDS, NEW MEXICO JUNE 1947

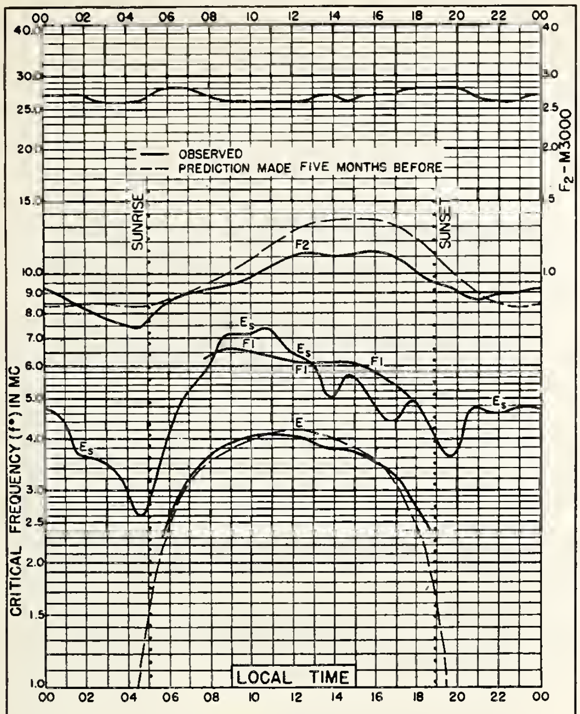

Fig. 24. WUCHANG, CHINA
30.6°N, 114.4°E JUNE 1947

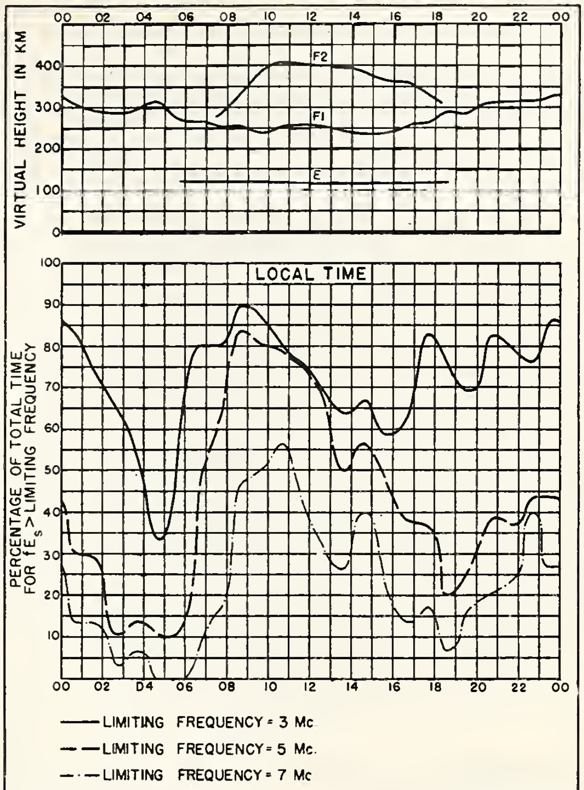

Fig. 25. WUCHANG, CHINA JUNE 1947

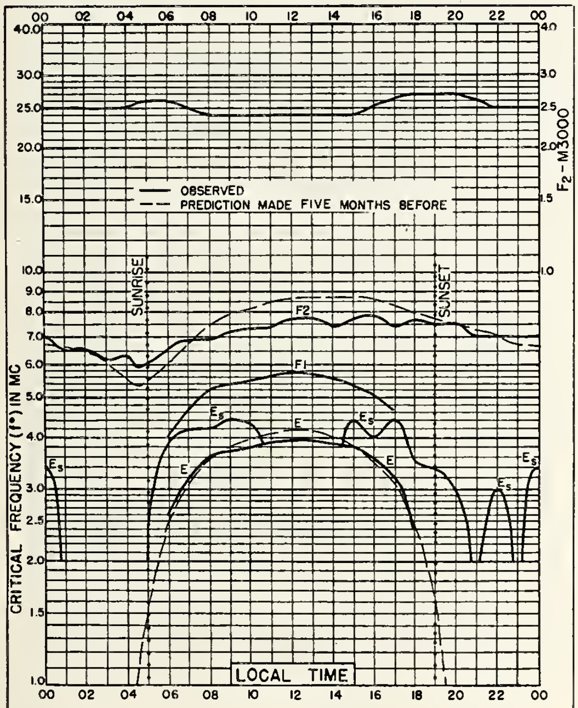

Fig. 26. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W JUNE 1947

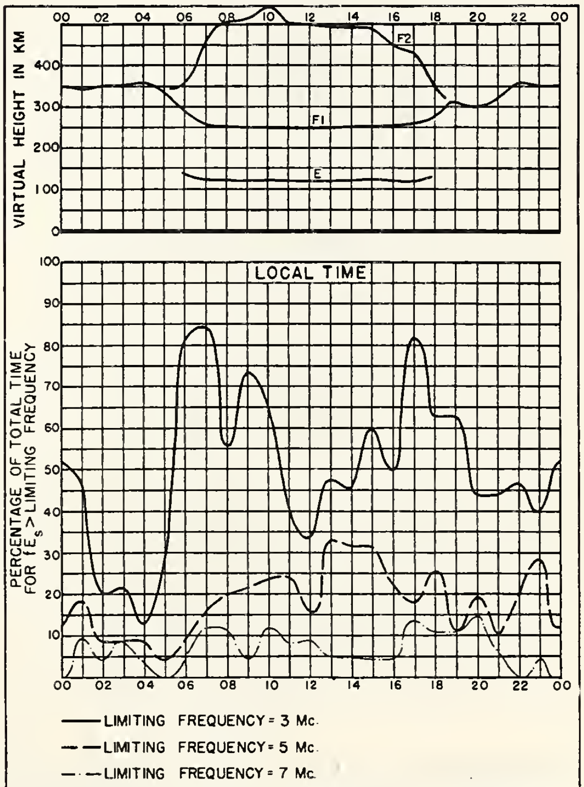

Fig. 27. BATON ROUGE, LOUISIANA JUNE 1947

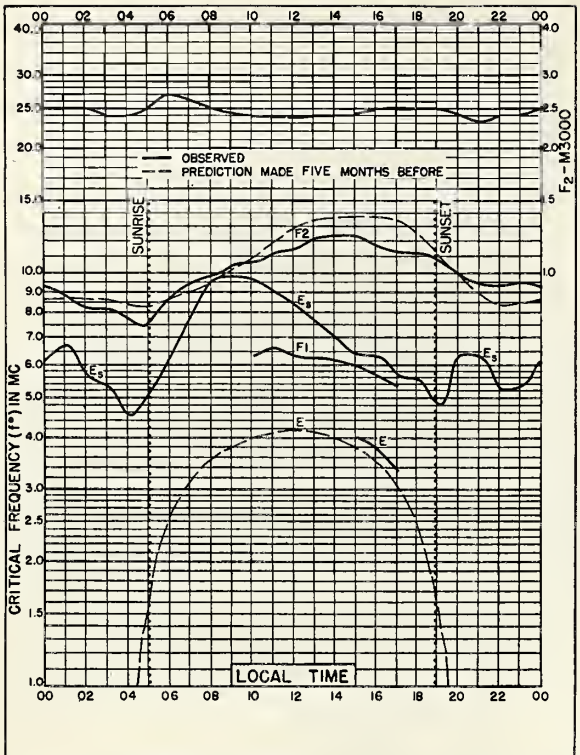

Fig. 28. CHUNGKING, CHINA
29.4°N, 106.8°E JUNE 1947

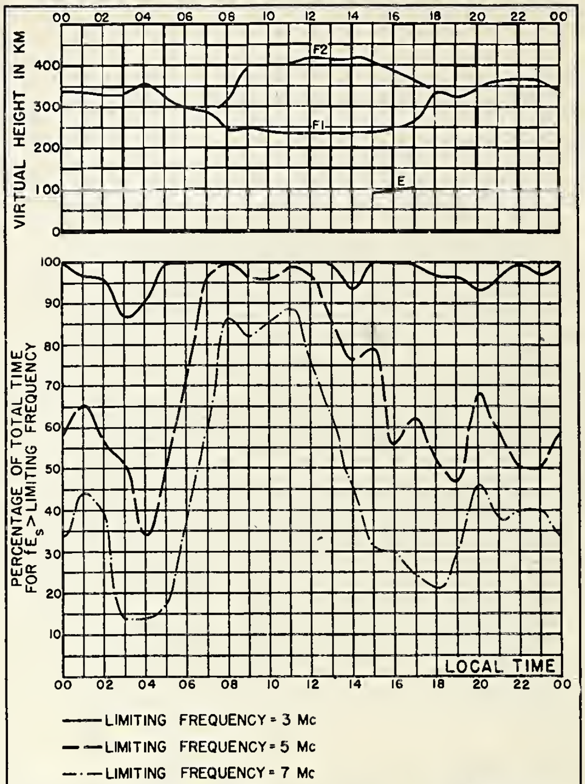

Fig. 29. CHUNGKING, CHINA JUNE 1947

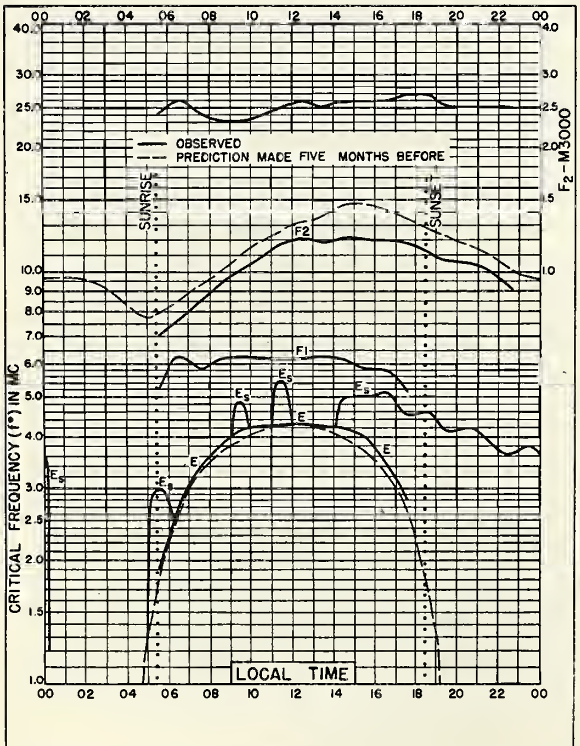

Fig. 30. MAUI, HAWAII
20.8°N, 156.5°W JUNE 1947

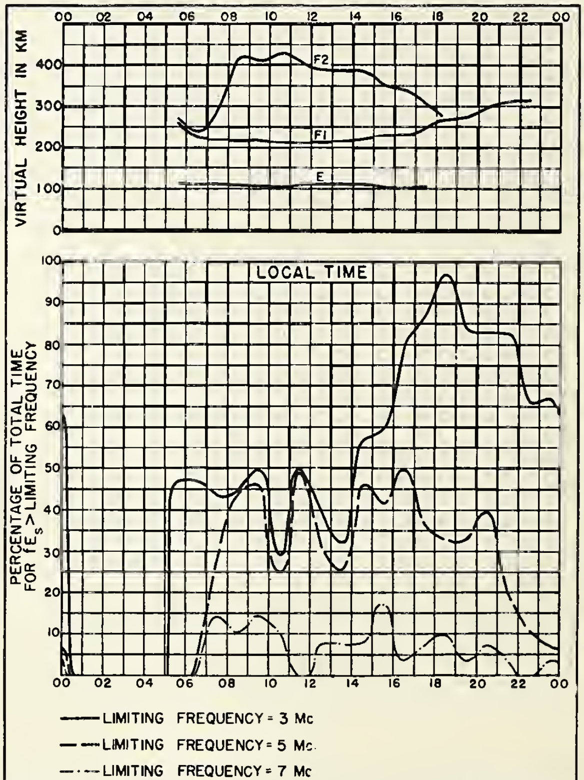

Fig. 31. MAUI, HAWAII JUNE 1947

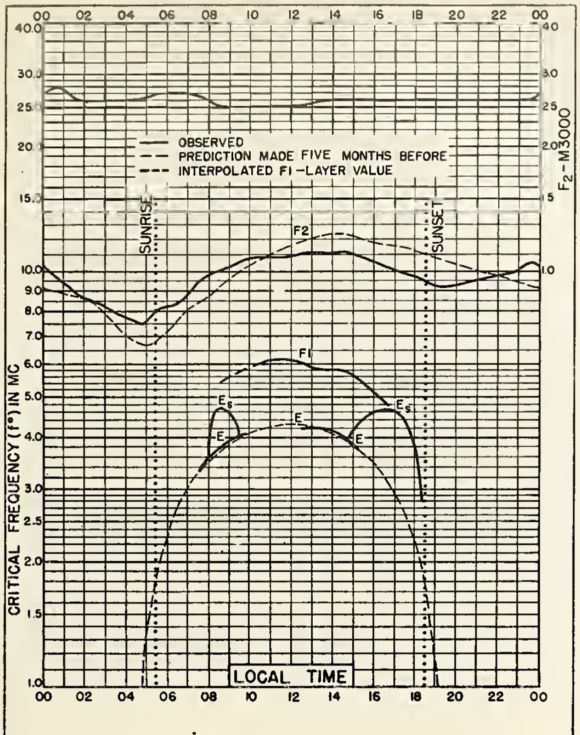

Fig. 32. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W JUNE 1947

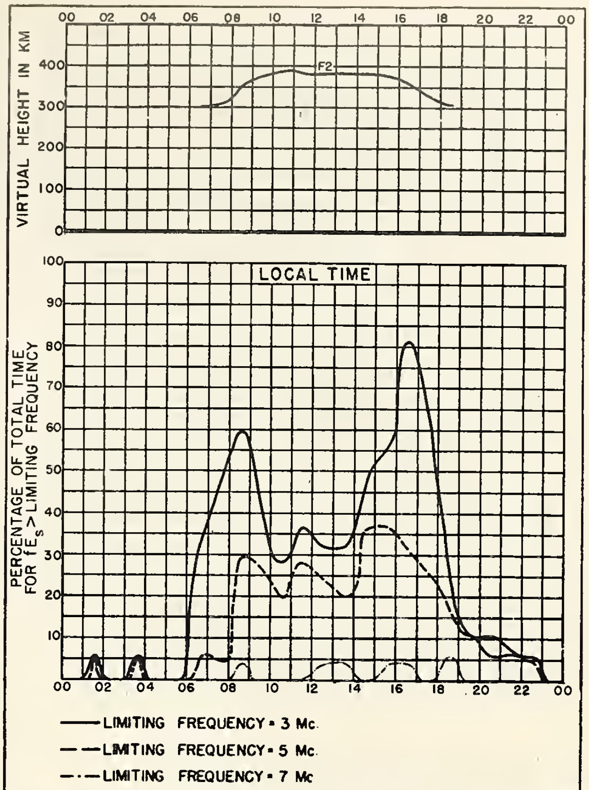

Fig. 33. SAN JUAN, PUERTO RICO JUNE 1947

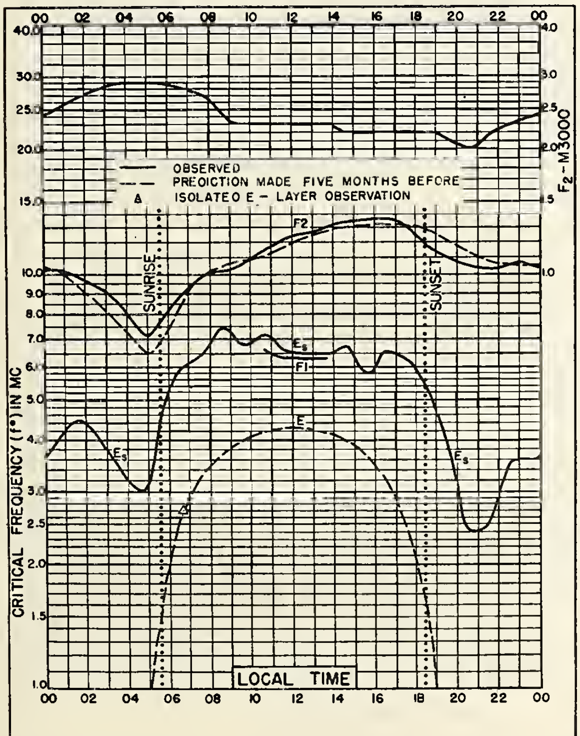

Fig. 34. GUAM I.
13.5°N, 144.8°E JUNE 1947

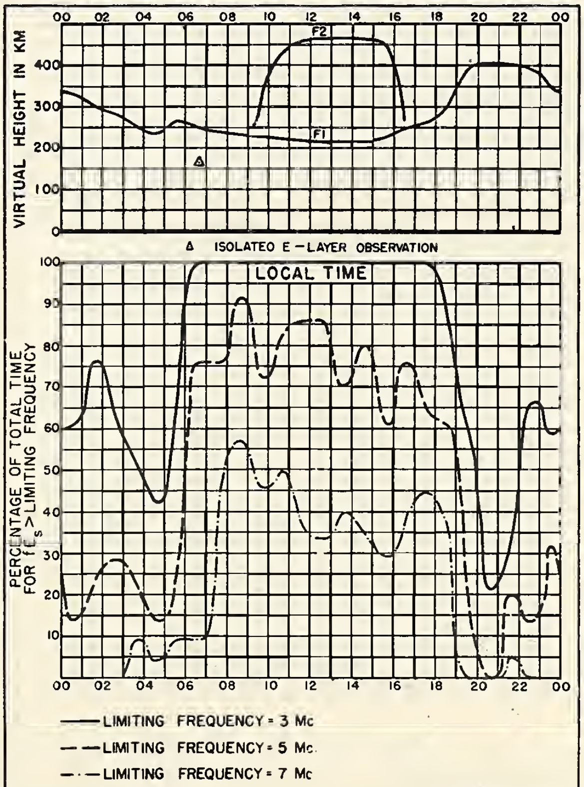

Fig. 35. GUAM I. JUNE 1947

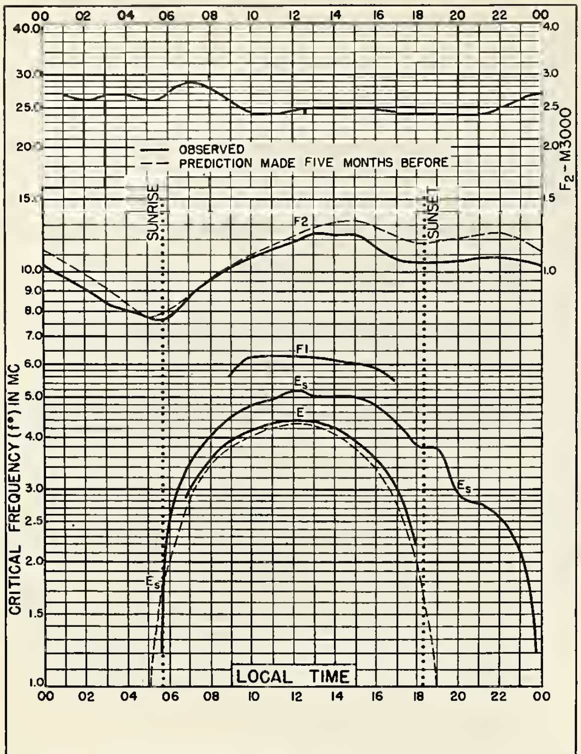

Fig. 36. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W JUNE 1947

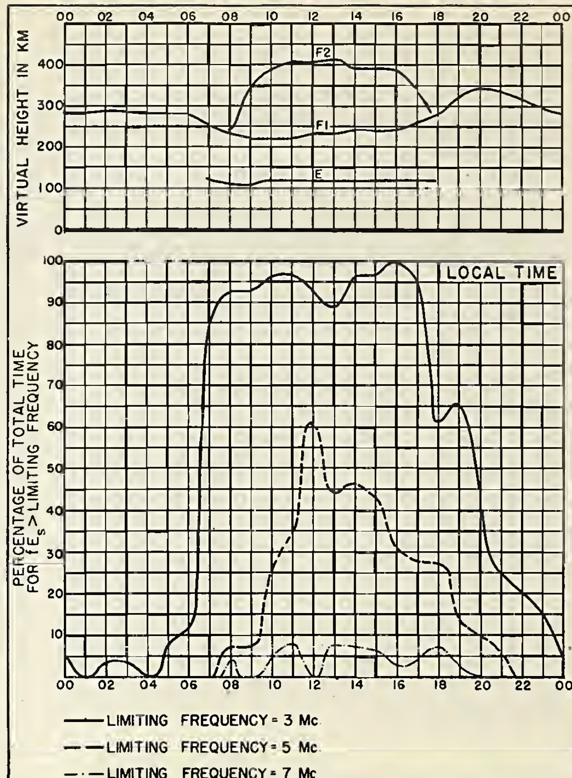

Fig. 37. TRINIDAD, BRIT. WEST INDIES JUNE 1947

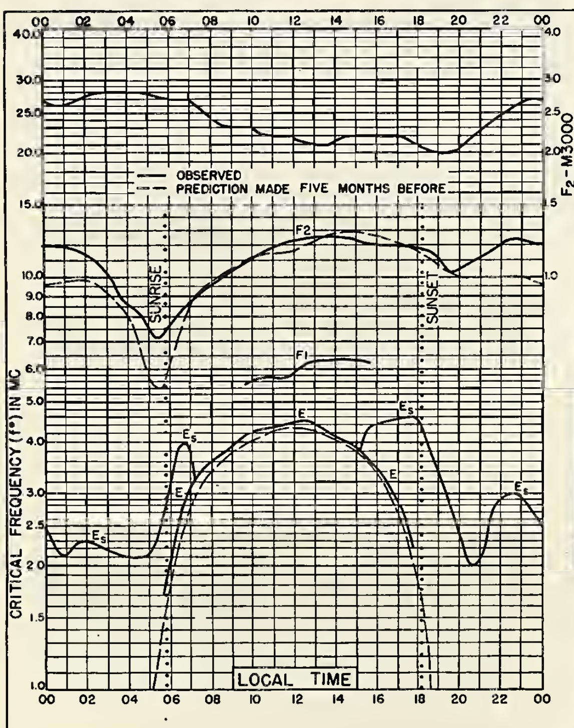

Fig. 38. PALMYRA I.
5.9°N, 162.1°W JUNE 1947

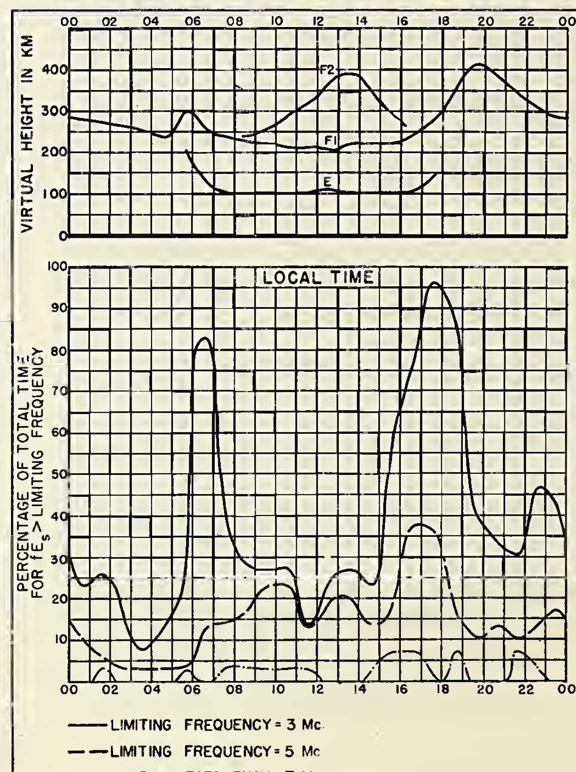

Fig. 39. PALMYRA I. JUNE 1947

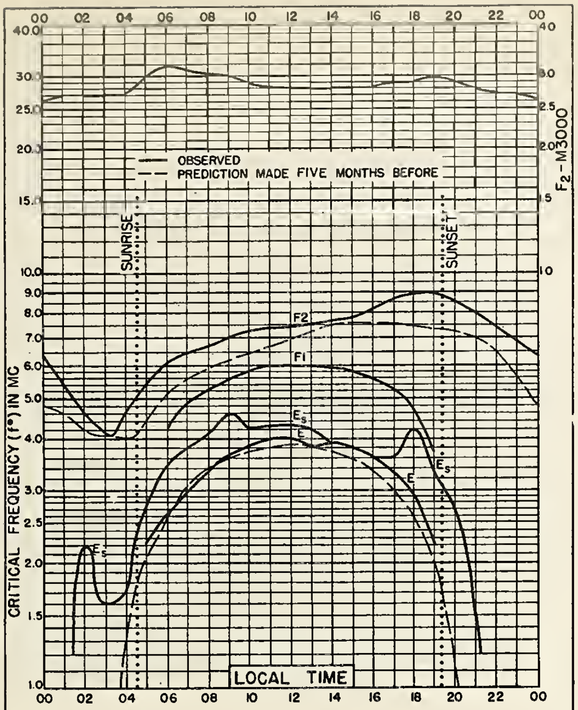

Fig. 40. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W MAY 1947

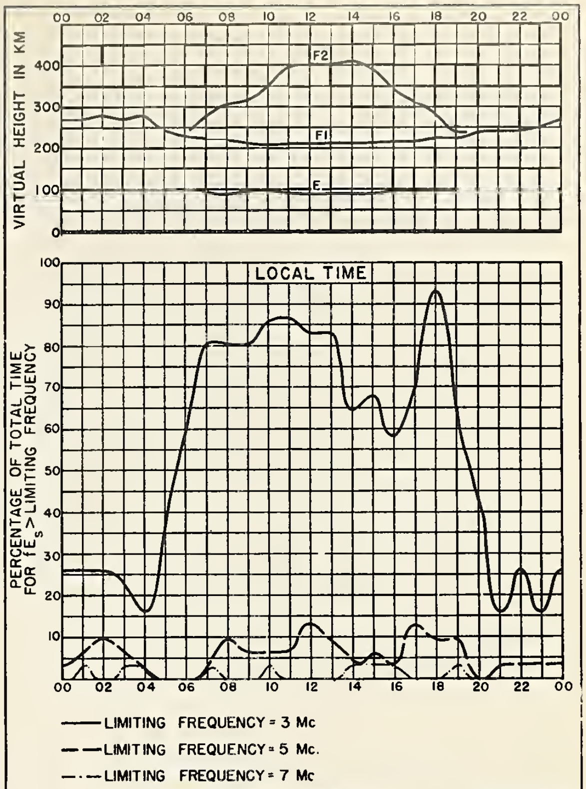

Fig. 41. ST. JOHN'S, NEWFOUNDLAND MAY 1947

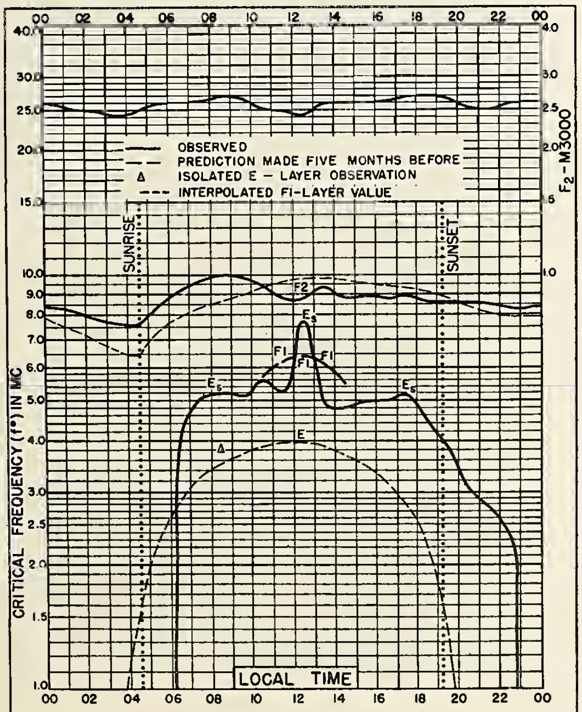

Fig. 42. WAKKANAI, JAPAN
45.4°N, 141.7°E MAY 1947

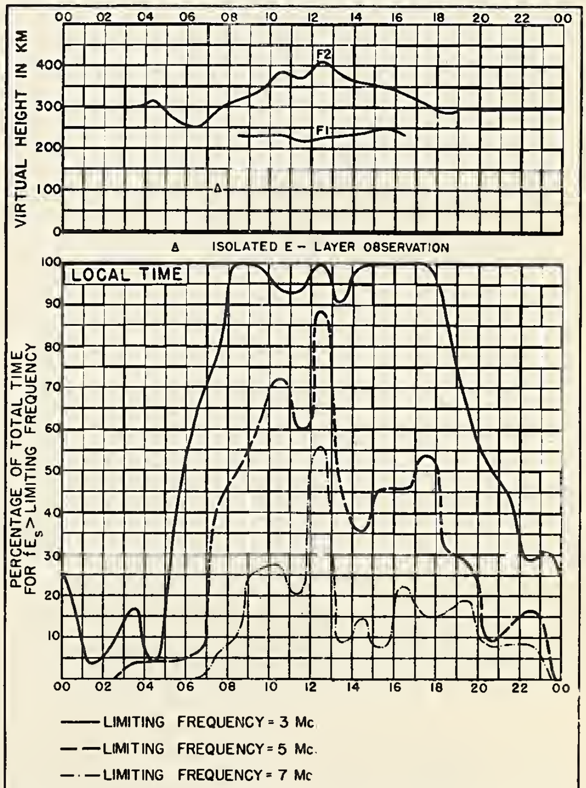

Fig. 43. WAKKANAI, JAPAN MAY 1947

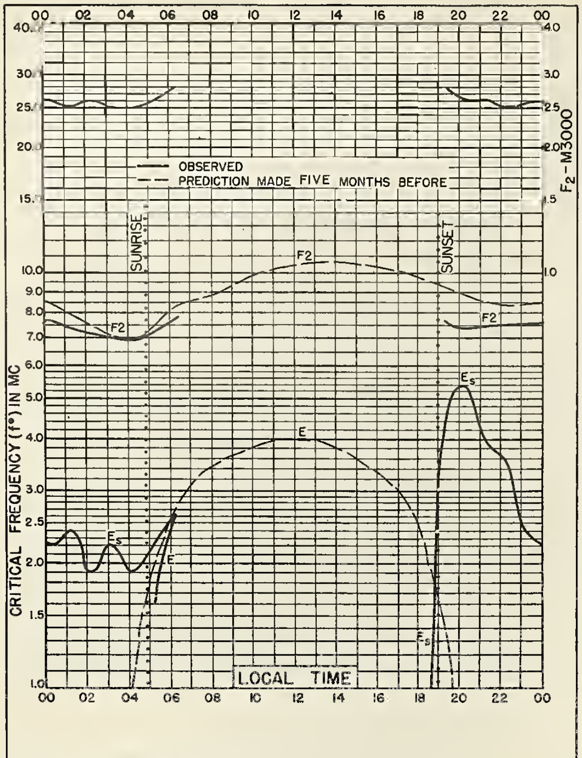

Fig. 44. FUKAURA, JAPAN
40.6°N, 139.9°E
MAY 1947

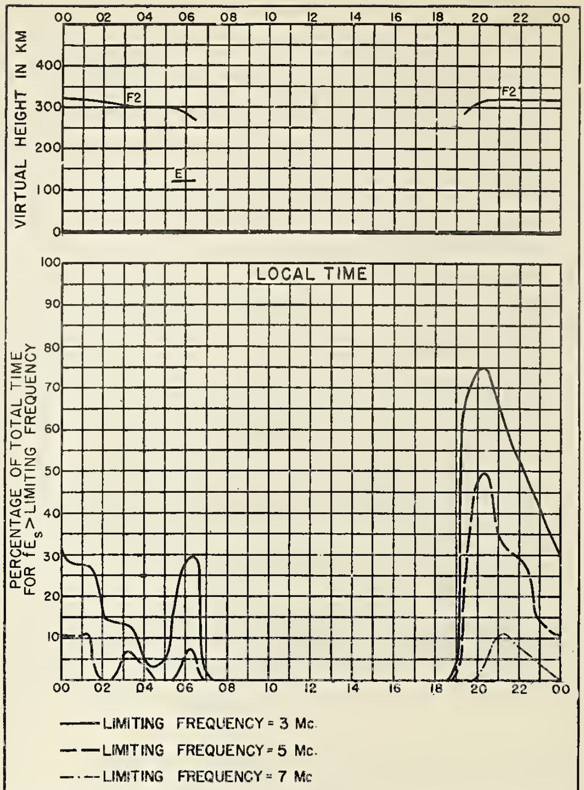

Fig. 45. FUKAURA, JAPAN
MAY 1947

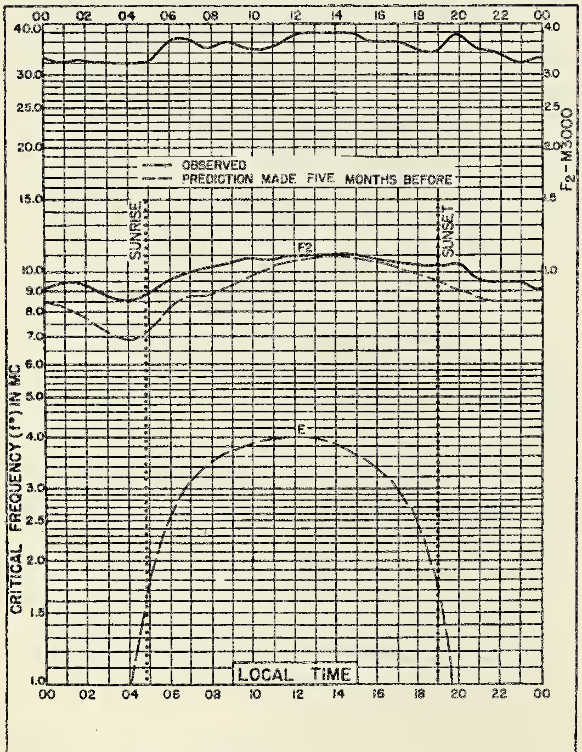

Fig. 46. PEIPING, CHINA
39.9°N, 116.4°E
MAY 1947

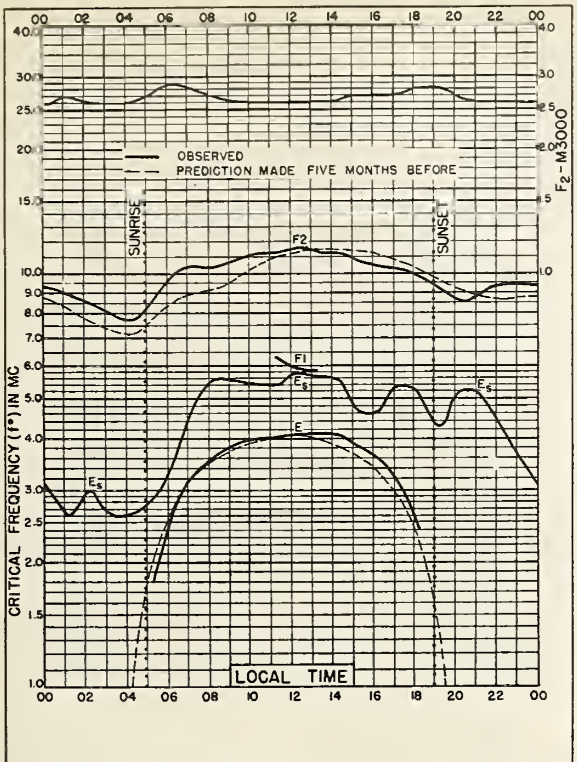

Fig. 47. SHIBATA, JAPAN
37.9°N, 139.3°E MAY 1947

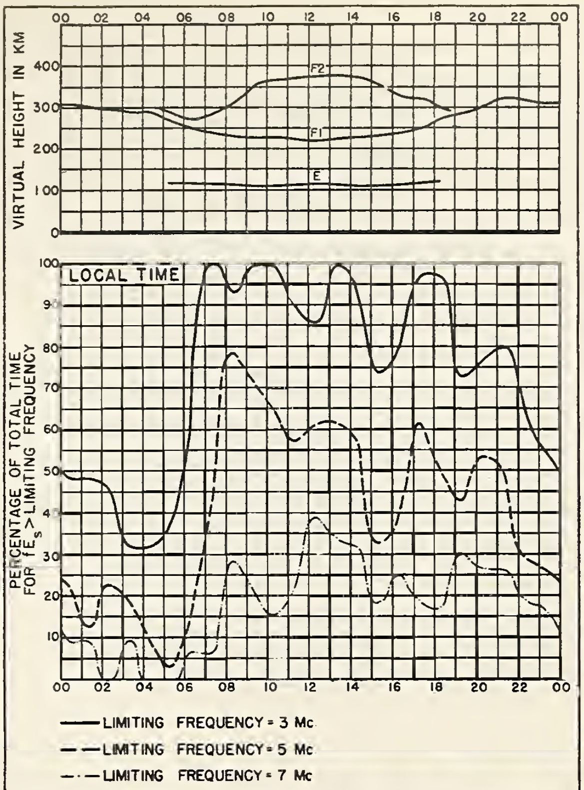

Fig. 48. SHIBATA, JAPAN MAY 1947

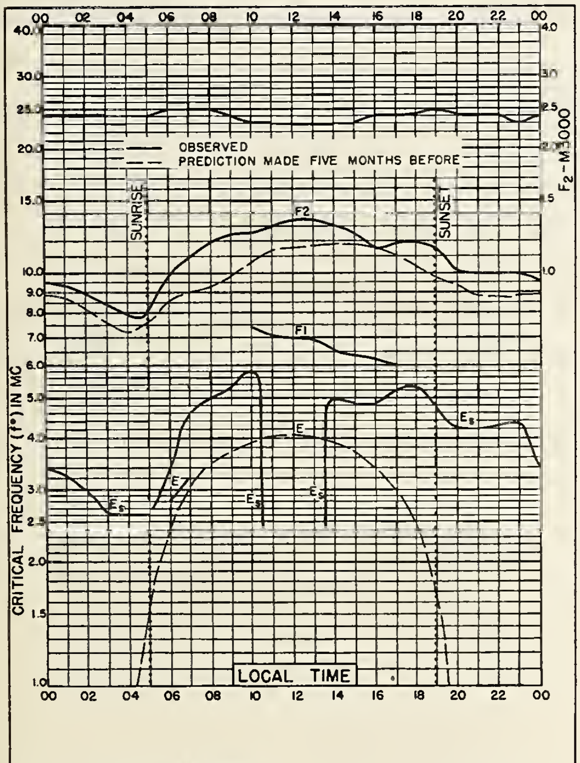

Fig. 49. LANCHOW, CHINA
36.1°N, 103.8°E MAY 1947

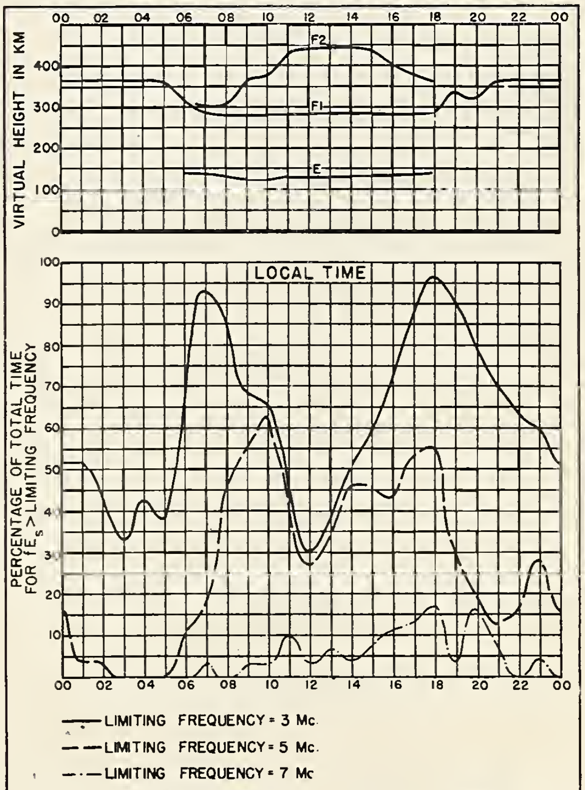

Fig. 50. LANCHOW, CHINA MAY 1947

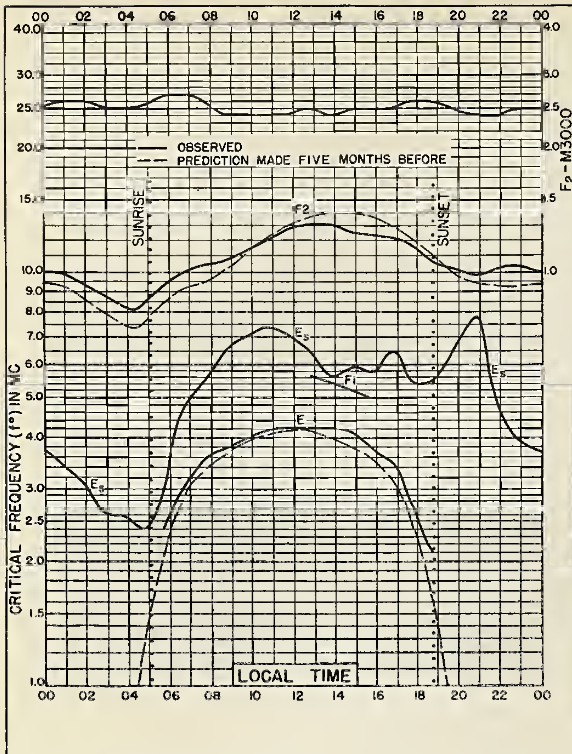

Fig. 51. YAMAKAWA, JAPAN
31.2°N, 130.6E MAY 1947

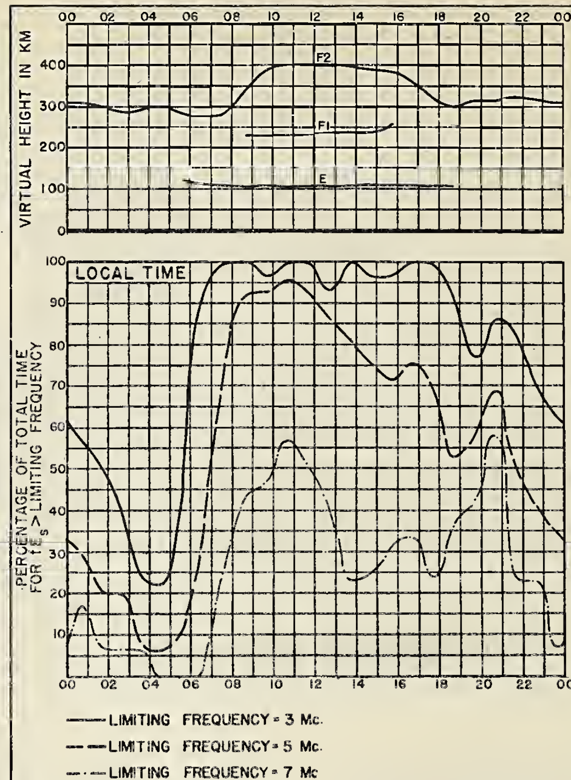

Fig. 52. YAMAKAWA, JAPAN MAY 1947

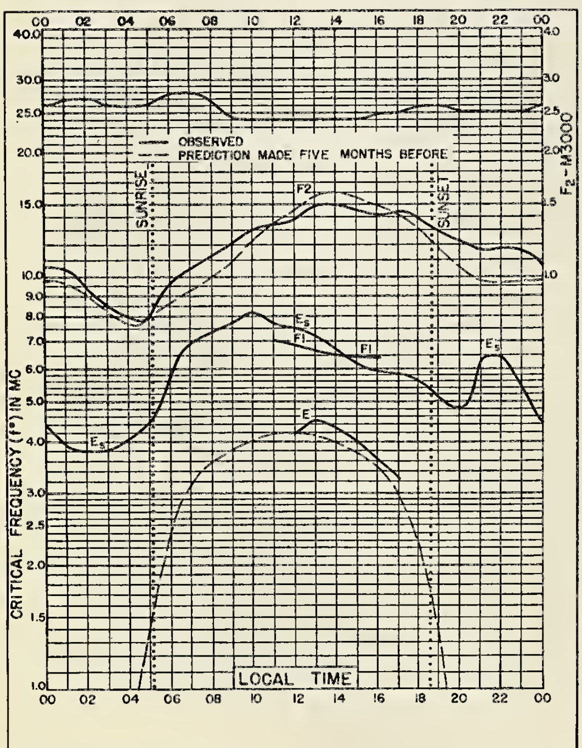

Fig. 53. CHUNGKING, CHINA
29.4°N, 106.8°E MAY 1947

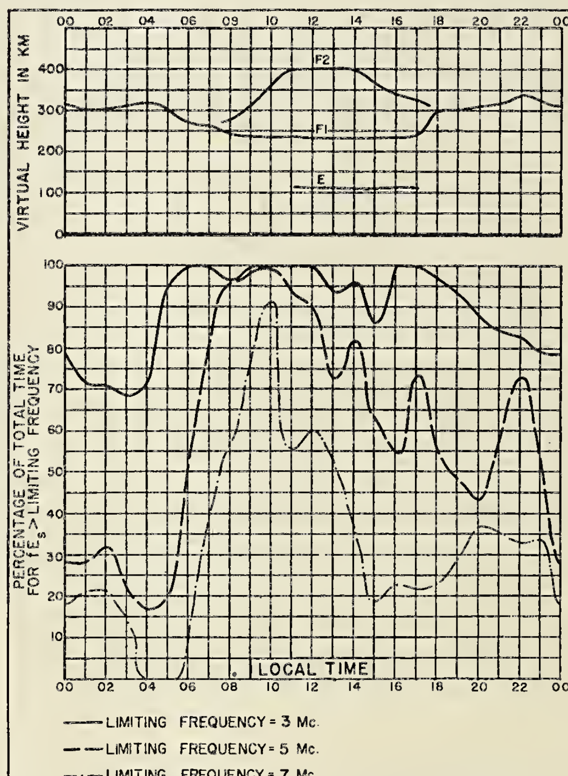

Fig. 54. CHUNGKING, CHINA MAY 1947

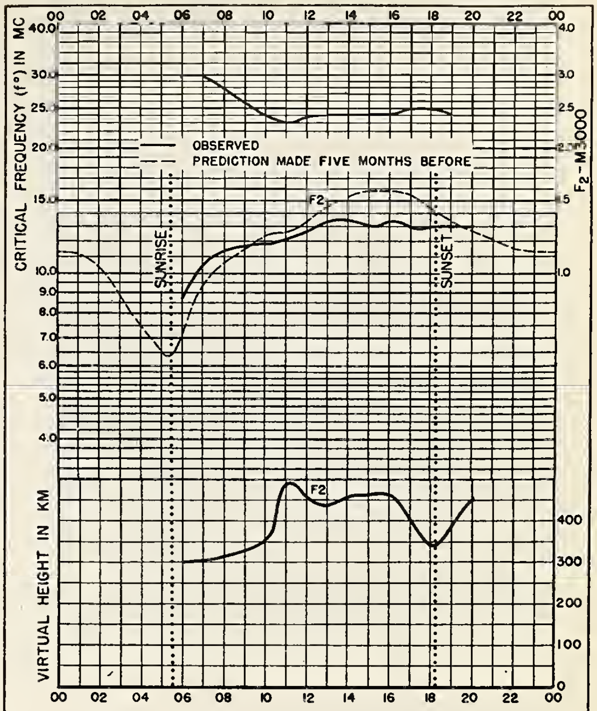

Fig. 55. MANILA, PHILIPPINE IS.
14.6°N, 121.0°E MAY 1947

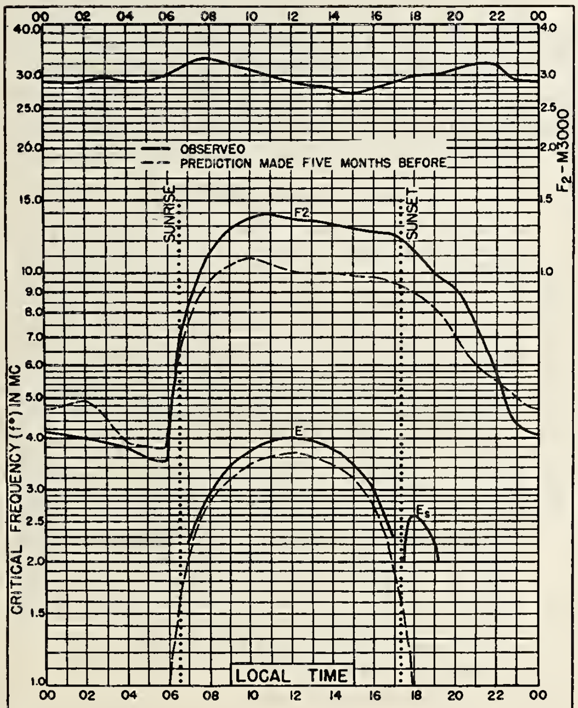

Fig. 56. JOHANNESBURG, U. OF S. AFRICA
26.2°S, 28.0°E MAY 1947

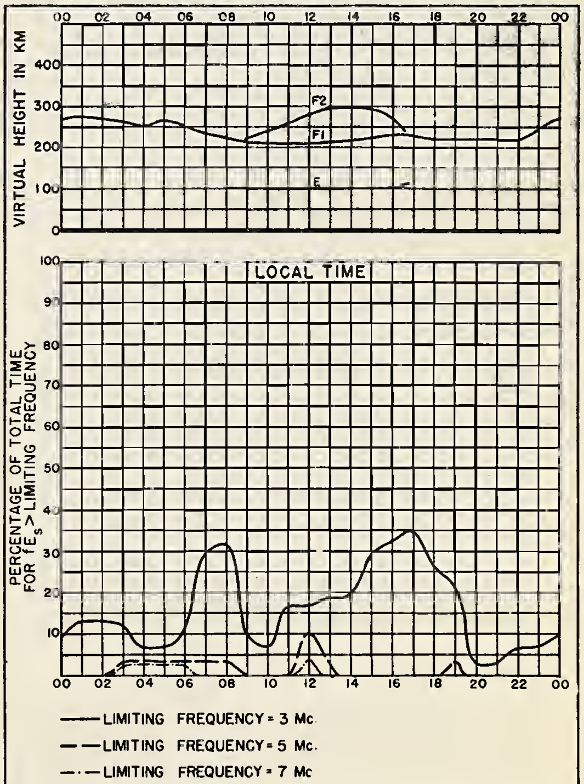

Fig. 57. JOHANNESBURG, U. OF S. AFRICA MAY 1947

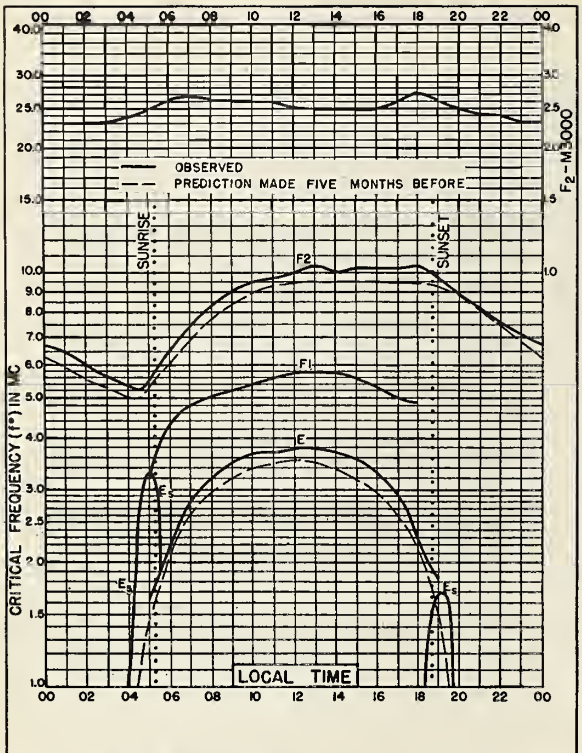

Fig. 58. SLOUGH, ENGLAND
51.5°N, 0.6°W APRIL 1947

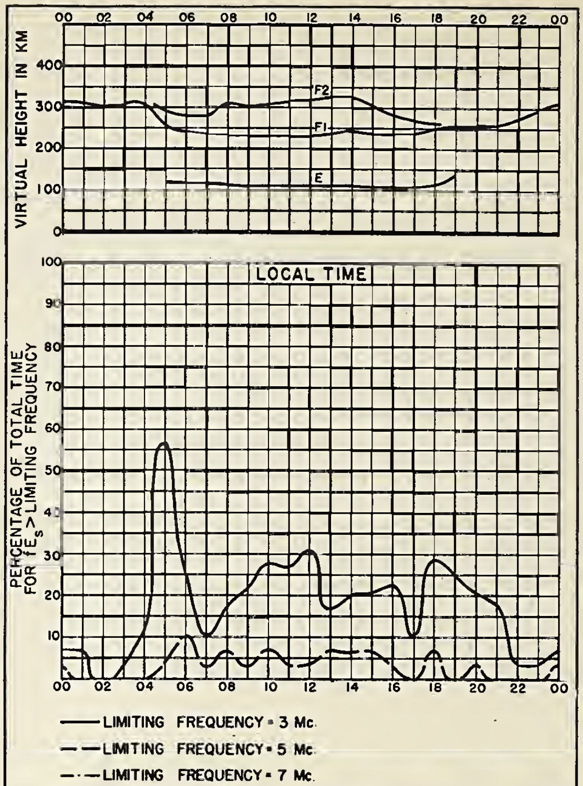

Fig. 59. SLOUGH, ENGLAND APRIL 1947

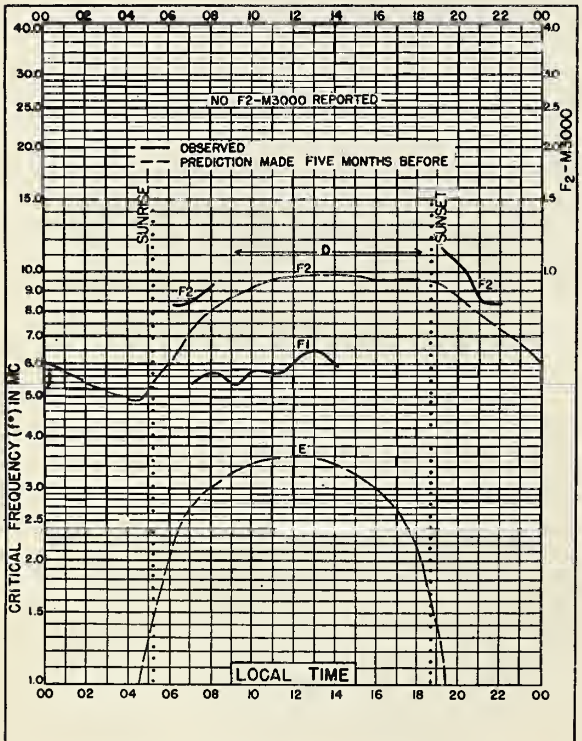

Fig. 60. BAGNEUX, FRANCE
48.8°N, 2.3°E APRIL 1947

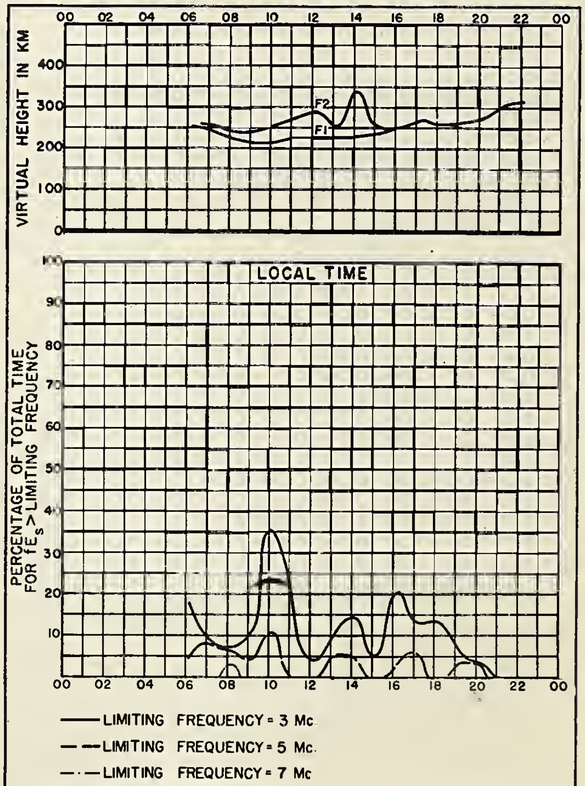

Fig. 61. BAGNEUX, FRANCE APRIL 1947

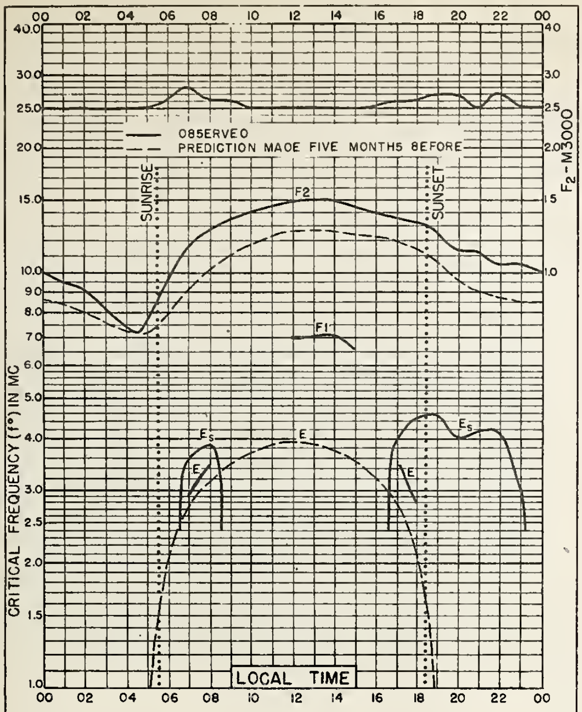

Fig. 62. LANCHOW, CHINA
36.1°N, 103.8°E APRIL 1947

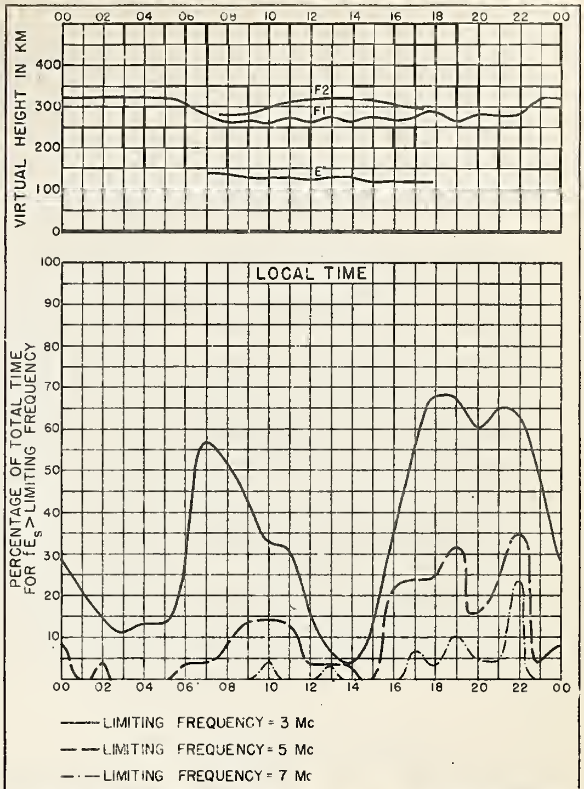

Fig. 63. LANCHOW, CHINA APRIL 1947

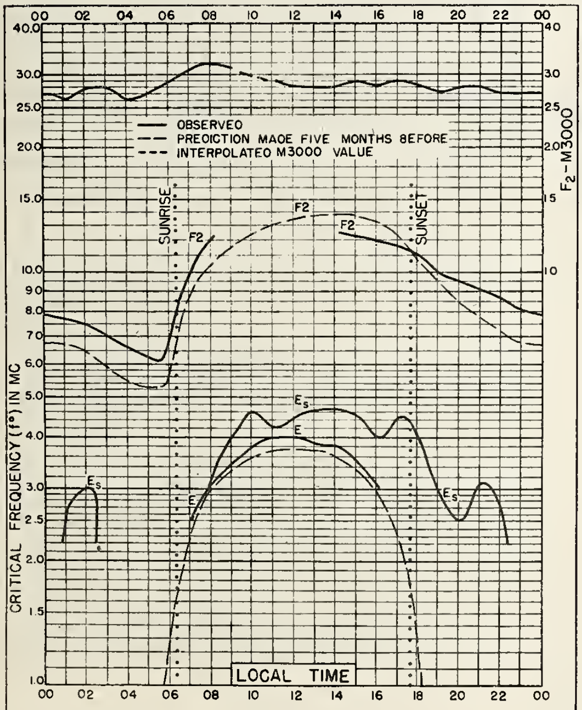

Fig. 64. BRISBANE, AUSTRALIA
27.5°S, 153.0°E APRIL 1947

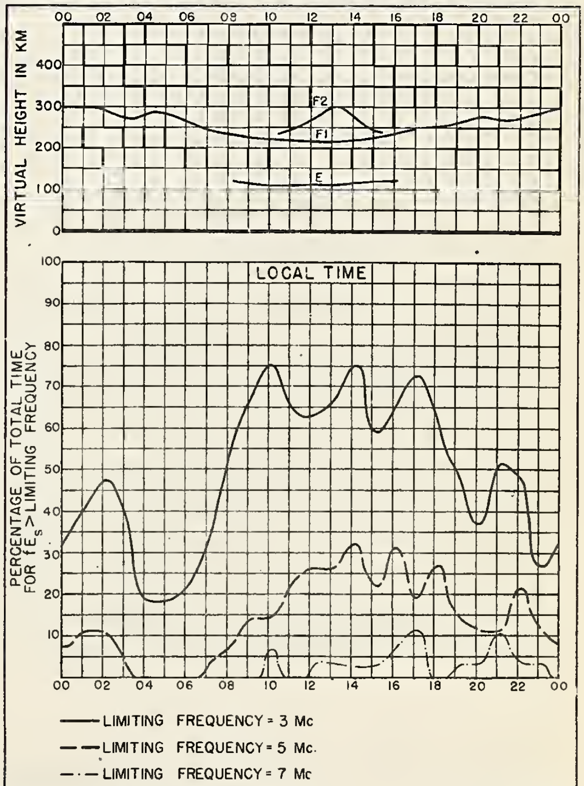

Fig. 65. BRISBANE, AUSTRALIA APRIL 1947

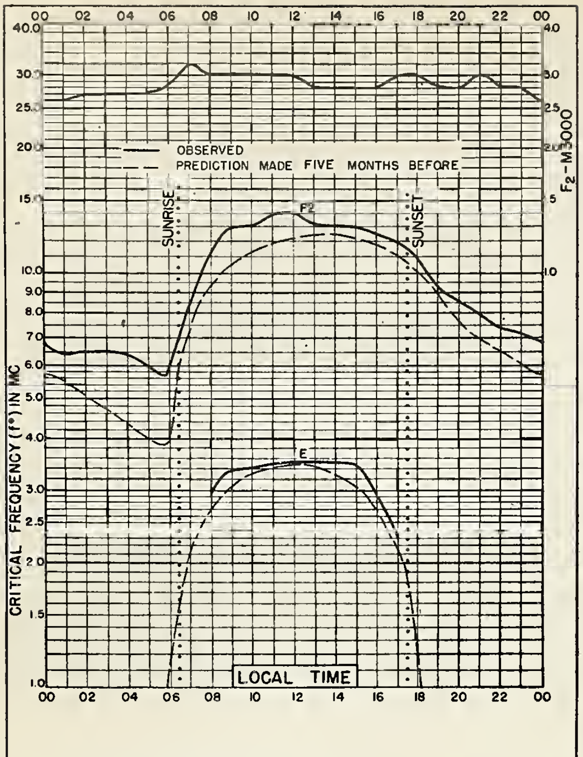

Fig. 66. CANBERRA, AUSTRALIA
35.3°S, 149.0°E APRIL 1947

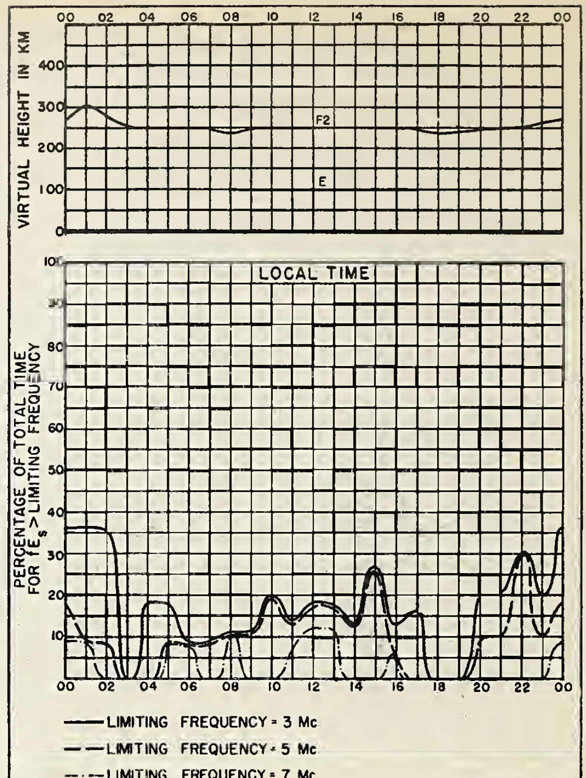

Fig. 67. CANBERRA, AUSTRALIA APRIL 1947

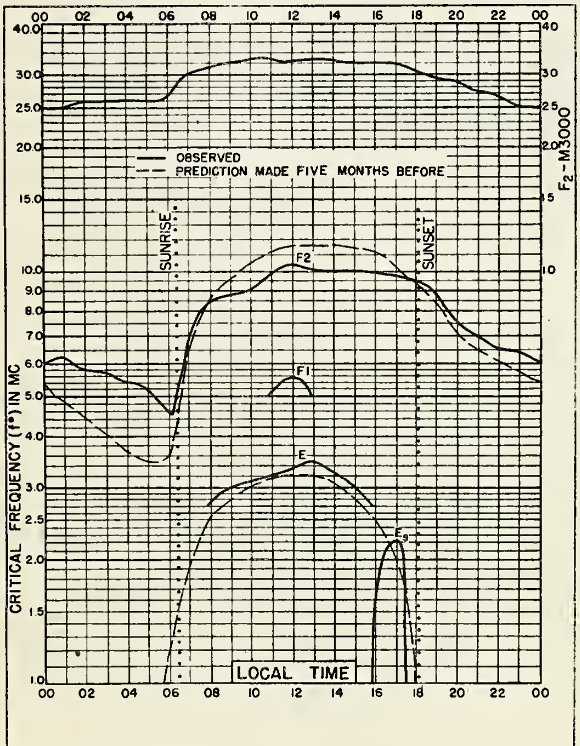

Fig. 68. HOBART, TASMANIA
42.8°S, 147.4°E APRIL 1947

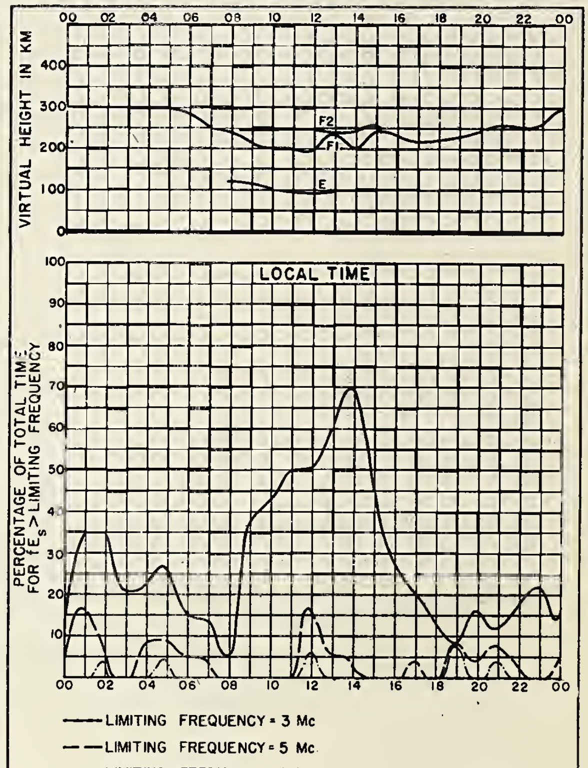

Fig. 69. HOBART, TASMANIA APRIL 1947

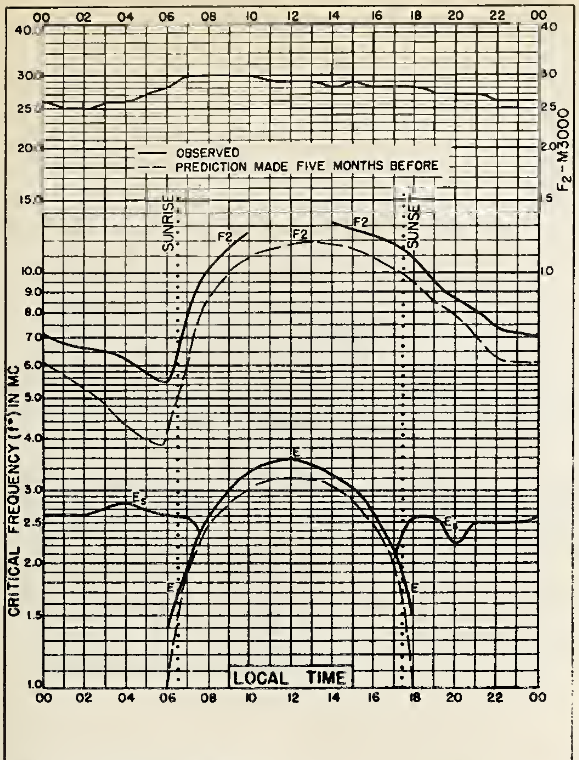

Fig. 70. CHRISTCHURCH, N. Z.
43.5°S, 172.7°E APRIL 1947

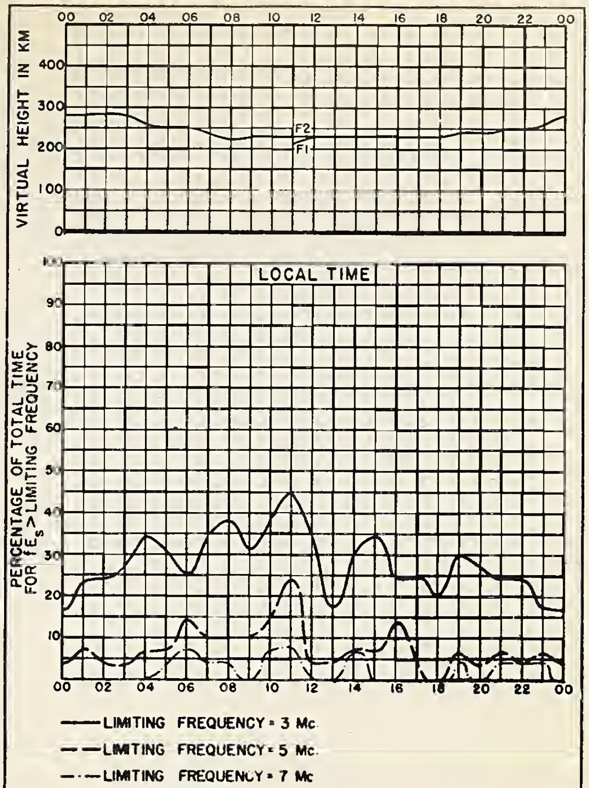

Fig. 71. CHRISTCHURCH, N. Z. APRIL 1947

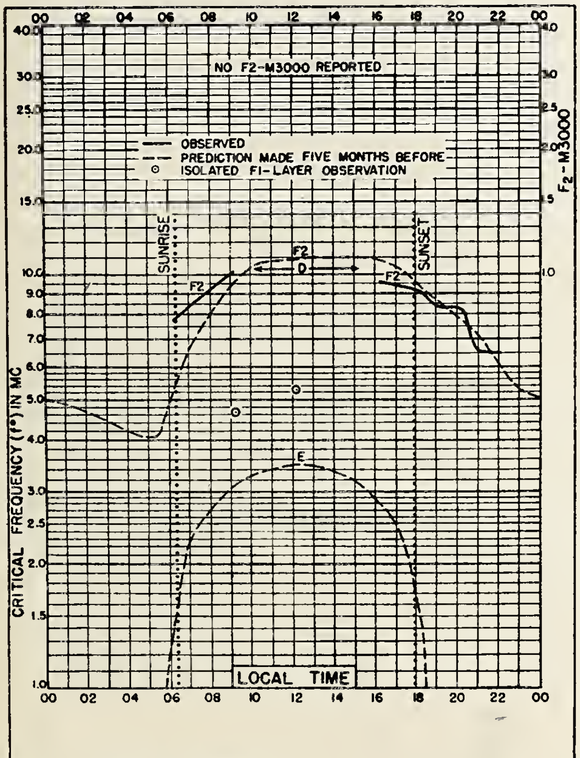

Fig. 72. BAGNEUX, FRANCE
48.8°N, 2.3°E MARCH 1947

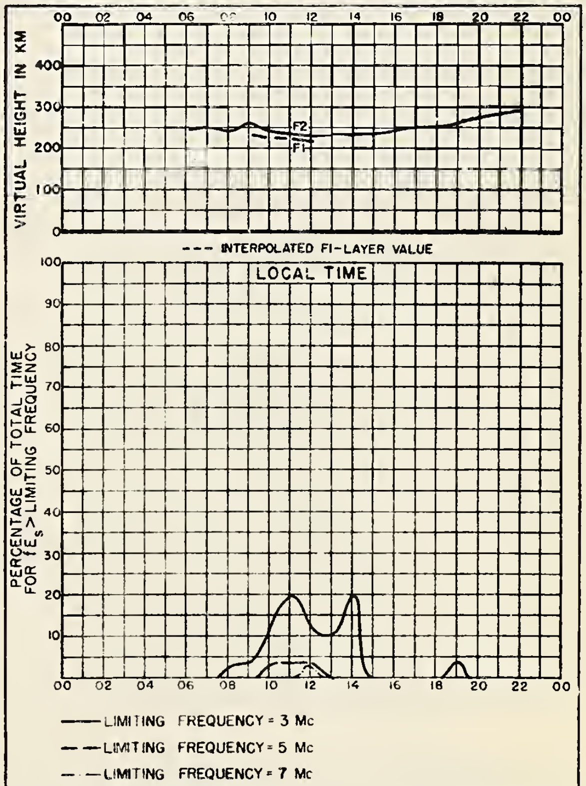

Fig. 73. BAGNEUX, FRANCE MARCH 1947

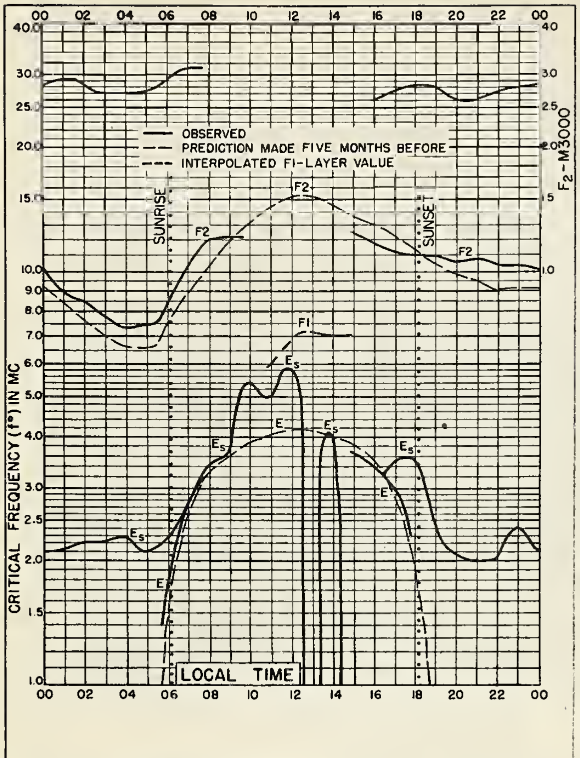

Fig. 74. TOWNSVILLE, AUSTRALIA
19.4°S, 146.5°E MARCH 1947

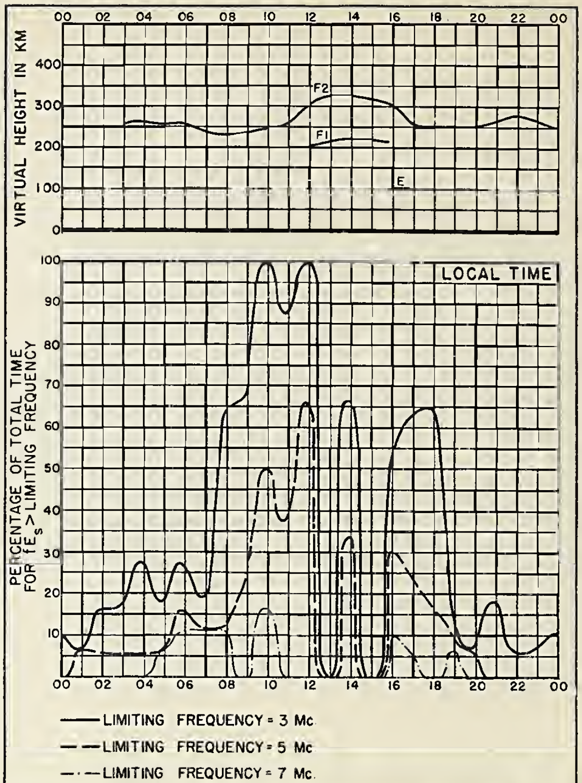

Fig. 75. TOWNSVILLE, AUSTRALIA MARCH 1947

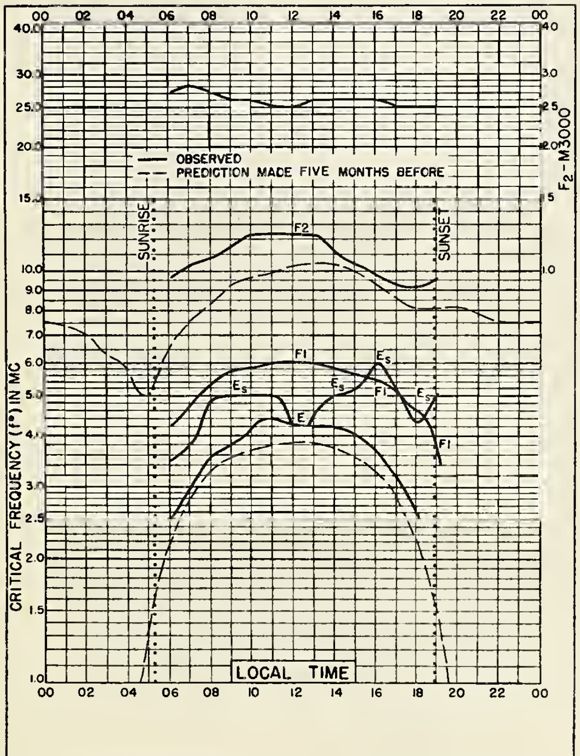

Fig. 76. KERMADEC IS.
29.2°S, 177.9°W JANUARY 1947

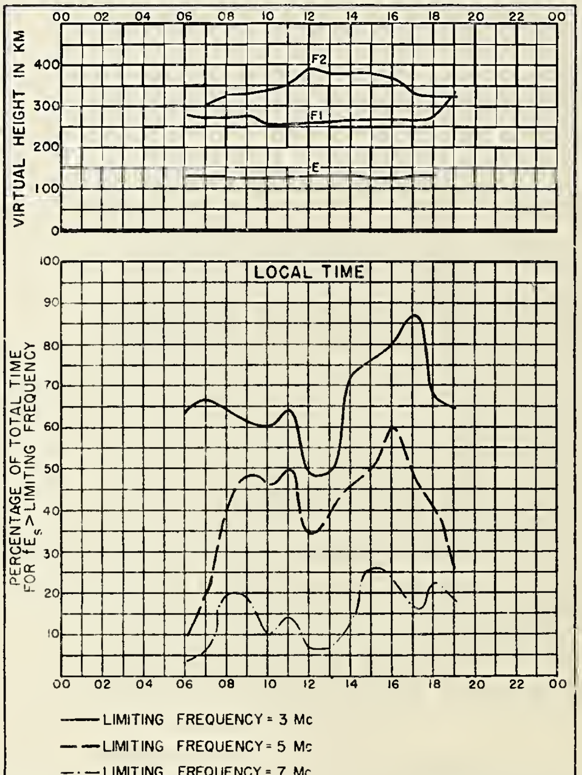

Fig 77. KERMADEC IS. JANUARY 1947

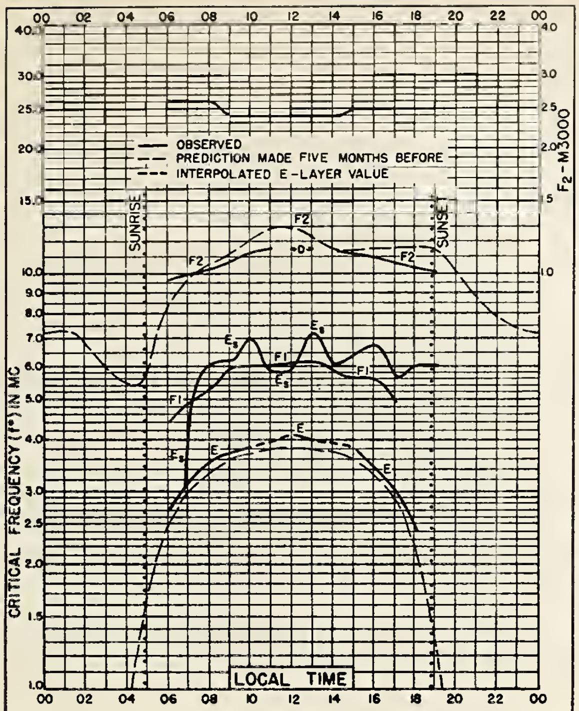

Fig. 78. KERMADEC IS.
29.2°S, 177.9°W DECEMBER 1946

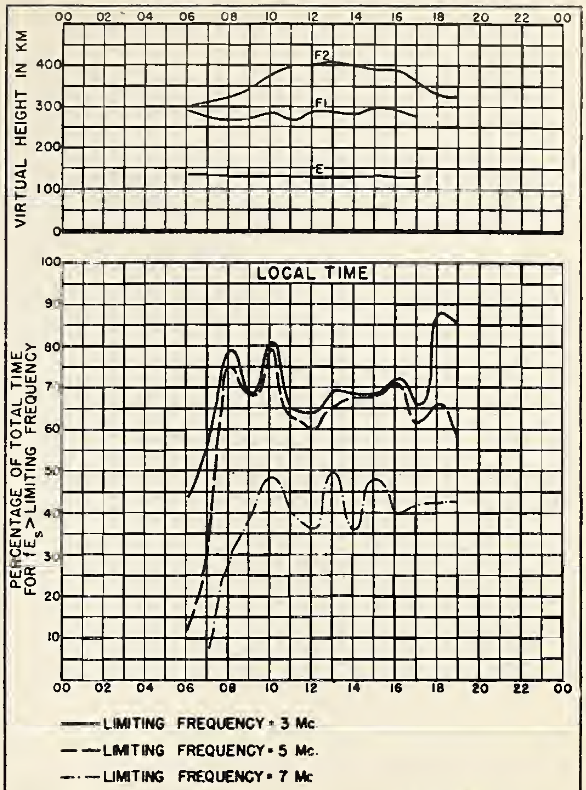

Fig. 79. KERMADEC IS. DECEMBER 1946

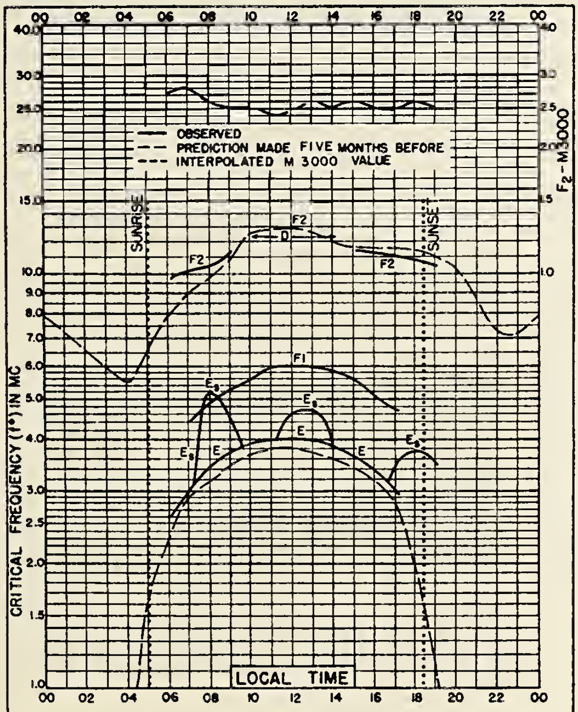

Fig. 80. KERMADEC IS.
29.2°S, 177.9°W NOVEMBER 1946

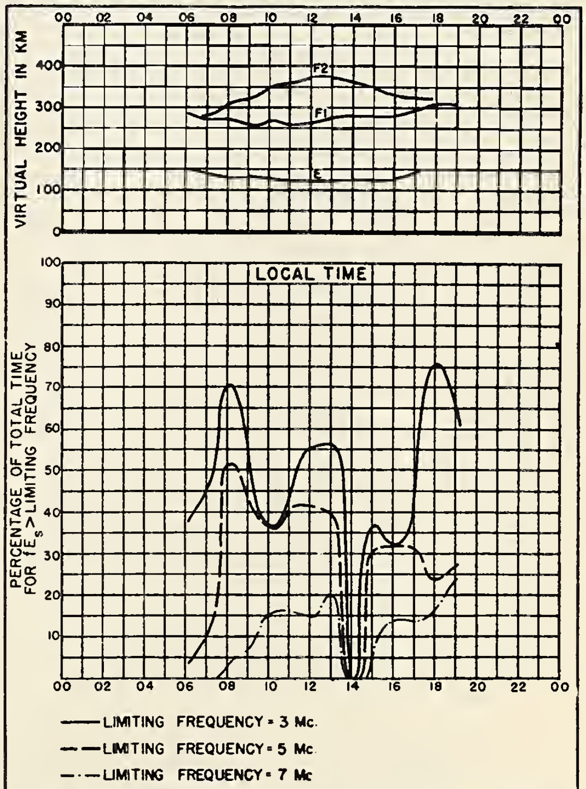

Fig. 81. KERMADEC IS. NOVEMBER 1946

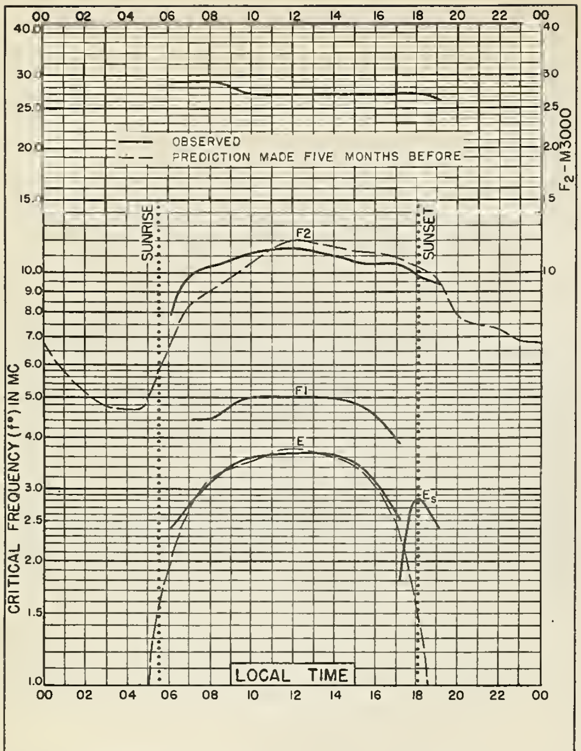

Fig. 82. KERMADEC IS.
29.2°S, 177.9°W OCTOBER 1946

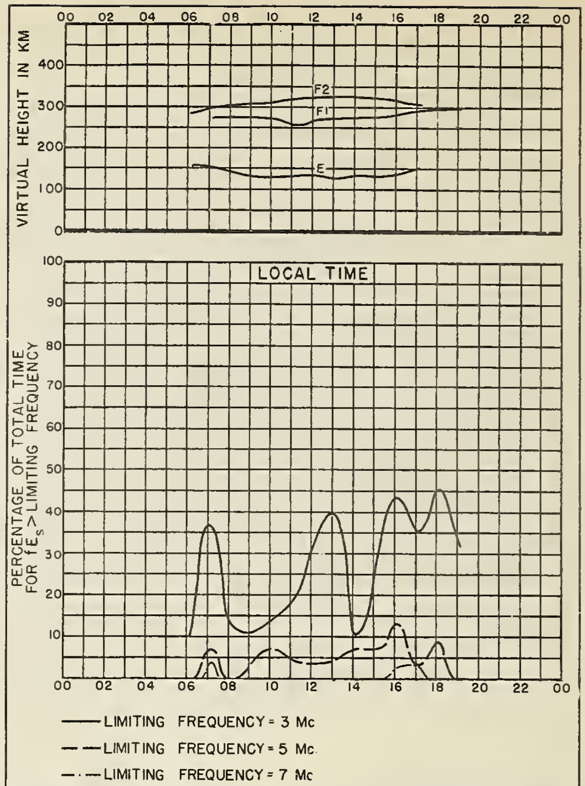

Fig. 83. KERMADEC IS. OCTOBER 1946

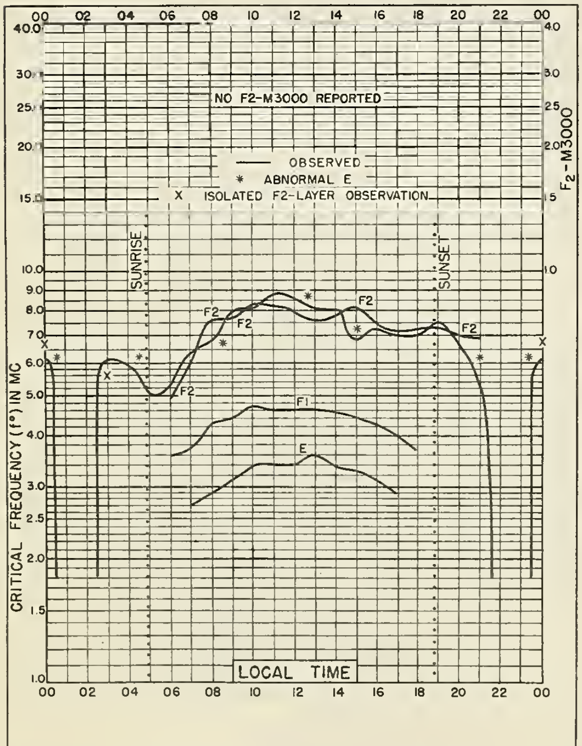

Fig. 84. KERMADEC IS.
29.2°S, 177.9°W DECEMBER 1943

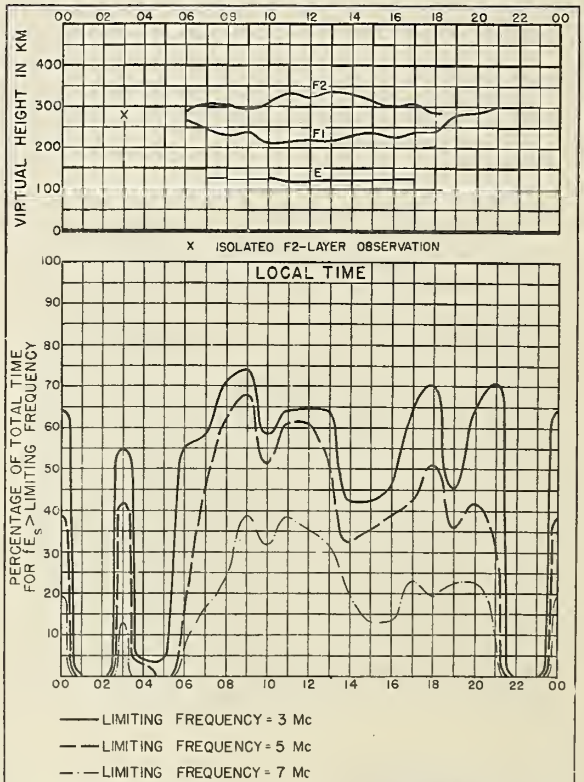

Fig. 85. KERMADEC IS. DECEMBER 1943

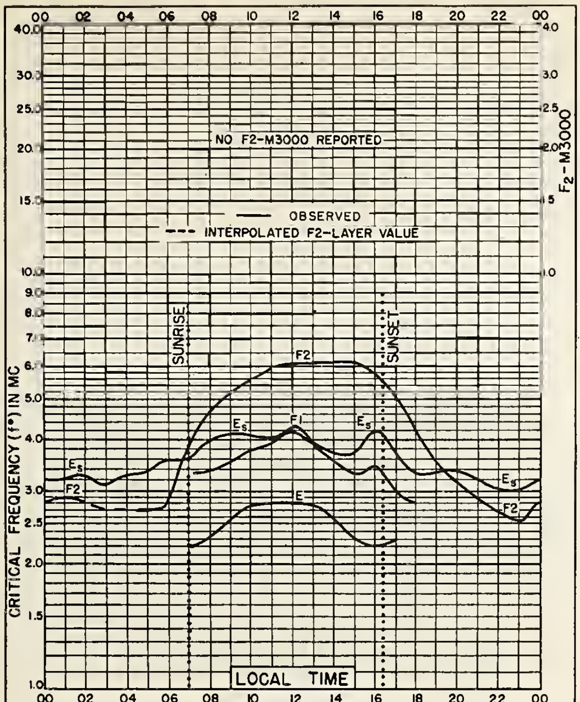

Fig. 86. OTTAWA, CANADA
45.5°N, 75.8°W NOVEMBER 1943

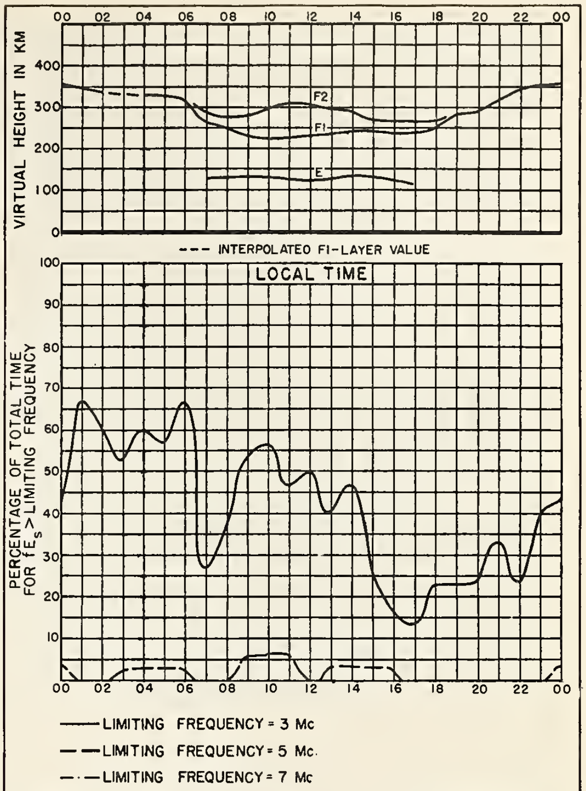

Fig. 87. OTTAWA, CANADA NOVEMBER 1943

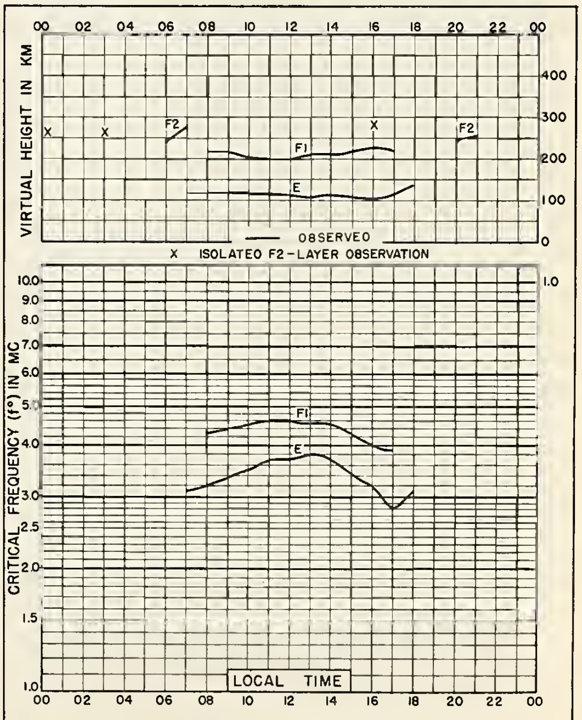

Fig. 88. KERMADEC IS.
29.2°S, 177.9°W NOVEMBER 1943

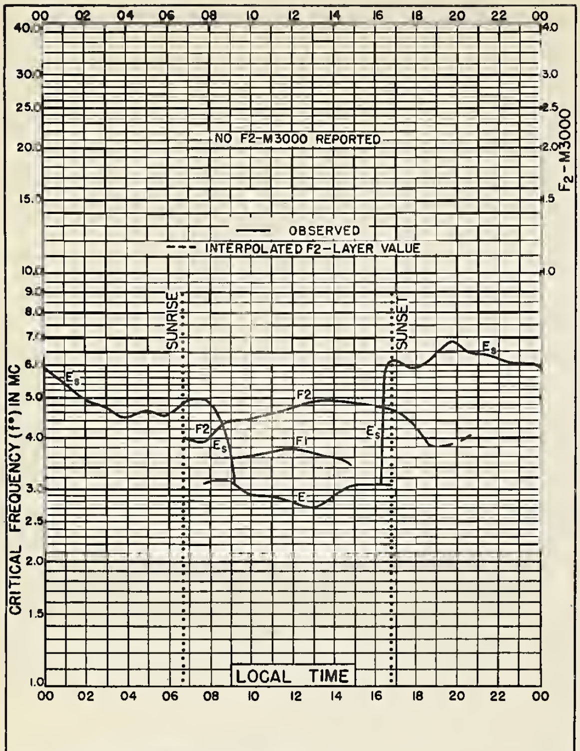

Fig. 89. CHURCHILL, CANADA
58.8°N, 94.2°W OCTOBER 1943

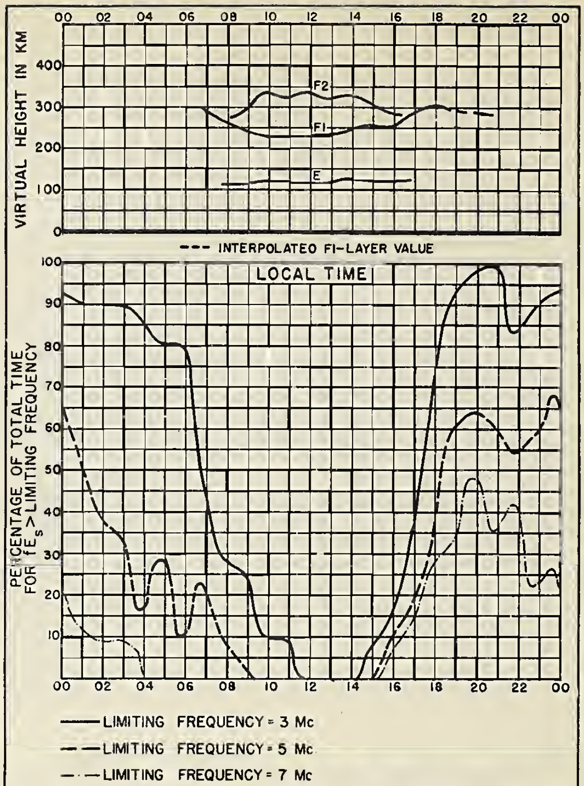

Fig. 90. CHURCHILL, CANADA OCTOBER 1943

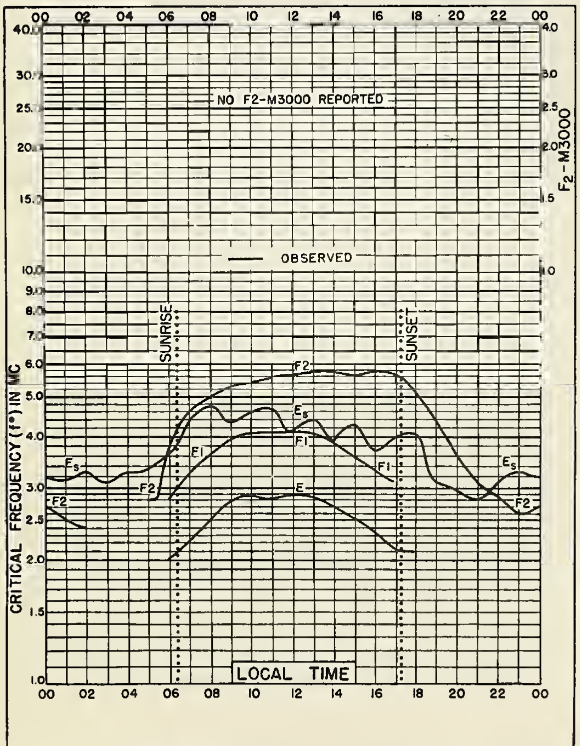

Fig. 91. OTTAWA, CANADA
45.5°N, 75.8°W OCTOBER 1943

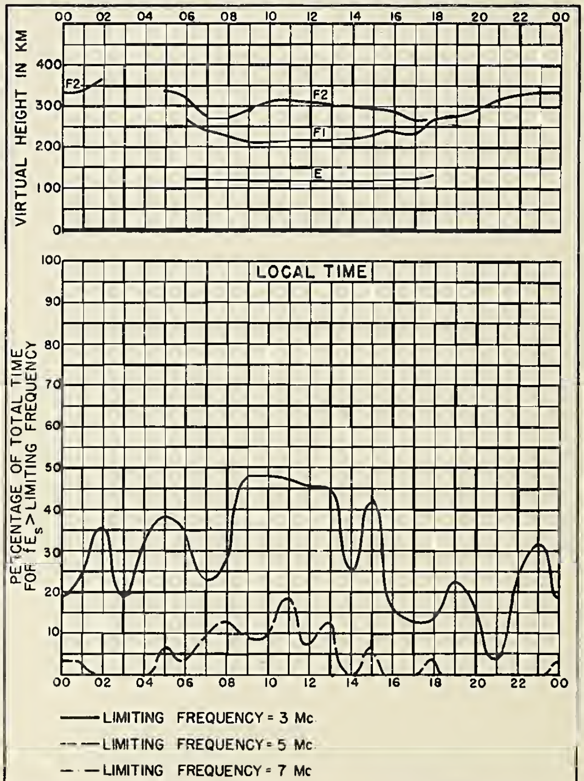

Fig. 92. OTTAWA, CANADA OCTOBER 1943

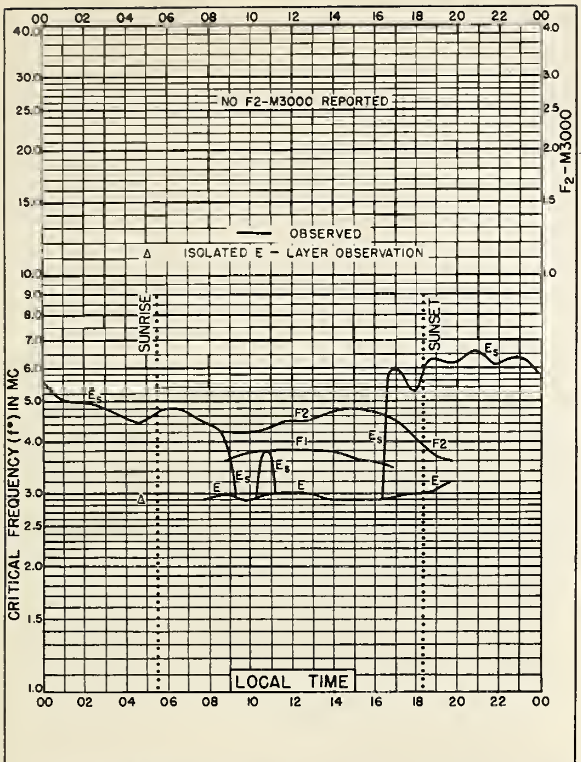

Fig. 93. CHURCHILL, CANADA
58.8°N, 94.2°W SEPTEMBER 1943

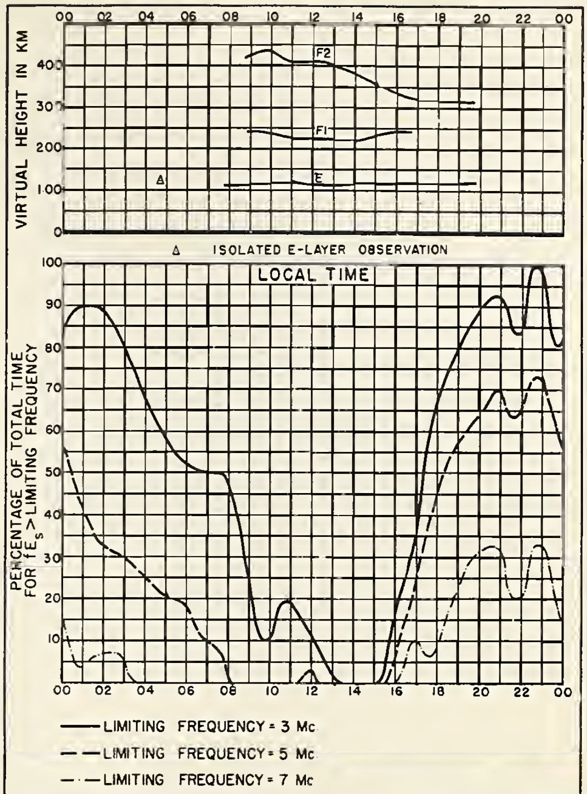

Fig. 94. CHURCHILL, CANADA SEPTEMBER 1943

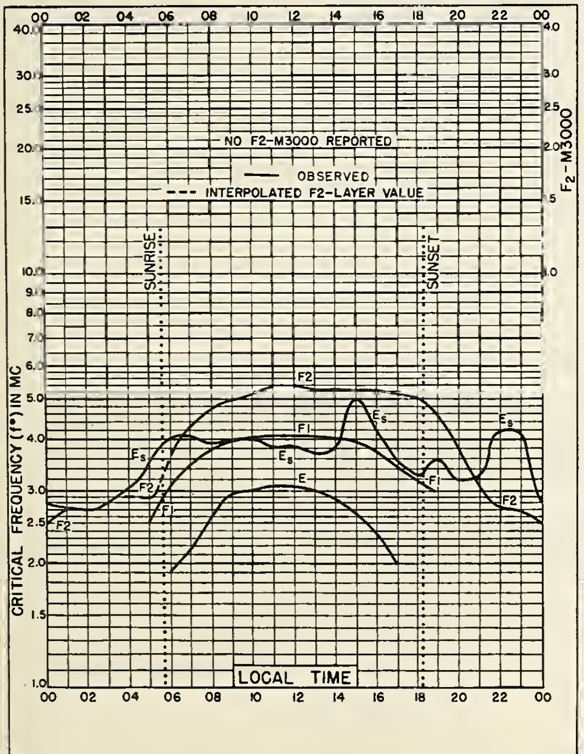

Fig. 95. OTTAWA, CANADA
45.5°N, 75.8°W SEPTEMBER 1943

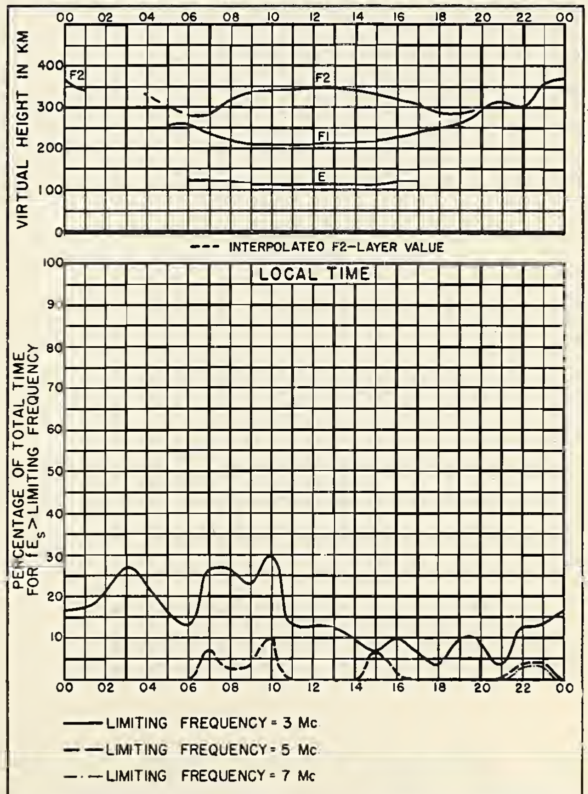

Fig. 96. OTTAWA, CANADA SEPTEMBER 1943

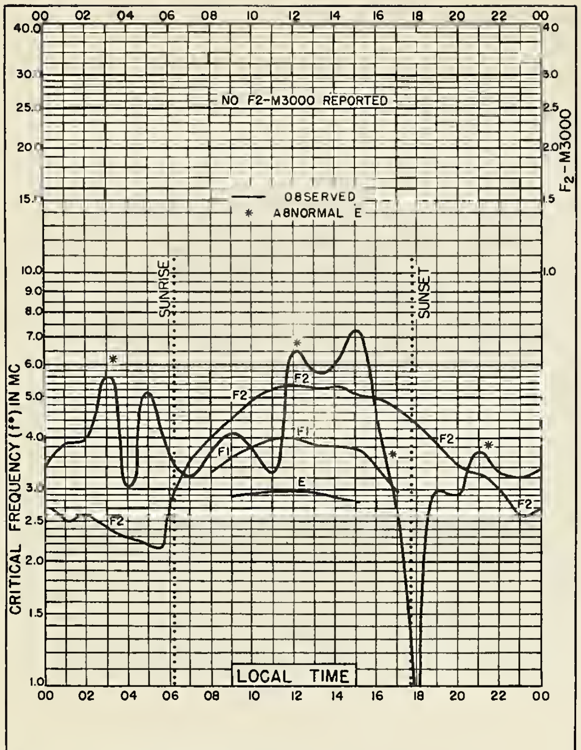

Fig. 97. CHRISTCHURCH, N.Z.
43.5°S, 172.7°E SEPTEMBER 1943

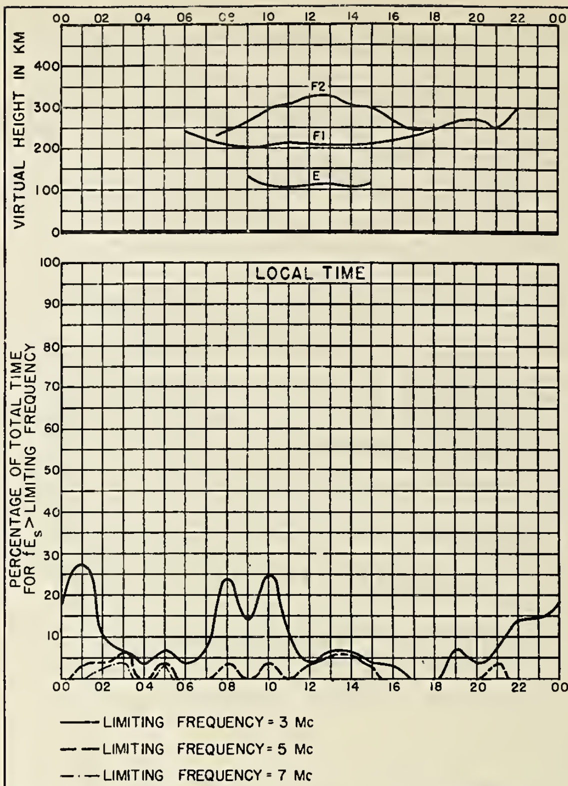

Fig. 98. CHRISTCHURCH, N.Z. SEPTEMBER 1943

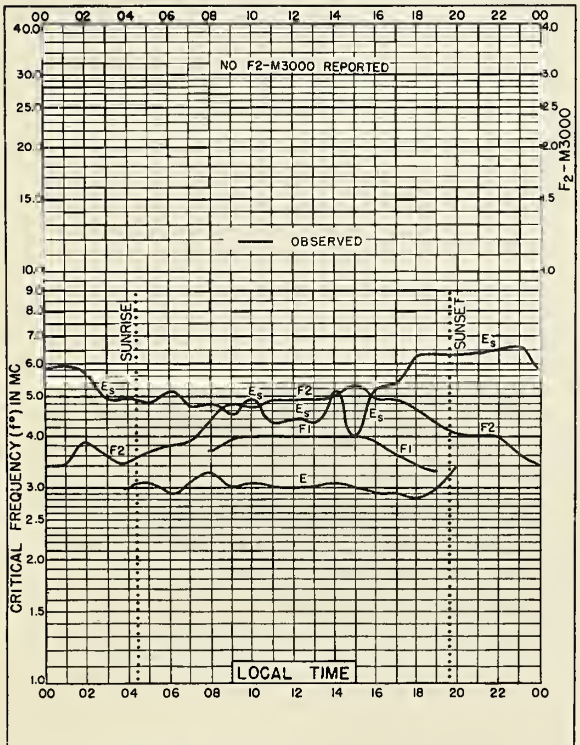

Fig. 99. CHURCHILL, CANADA
58.8°N, 94.2°W AUGUST 1943

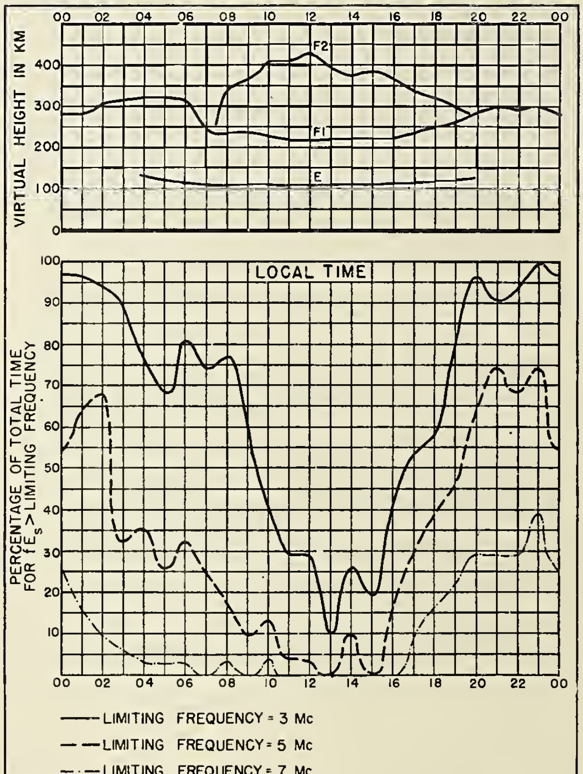

Fig. 100. CHURCHILL, CANADA AUGUST 1943

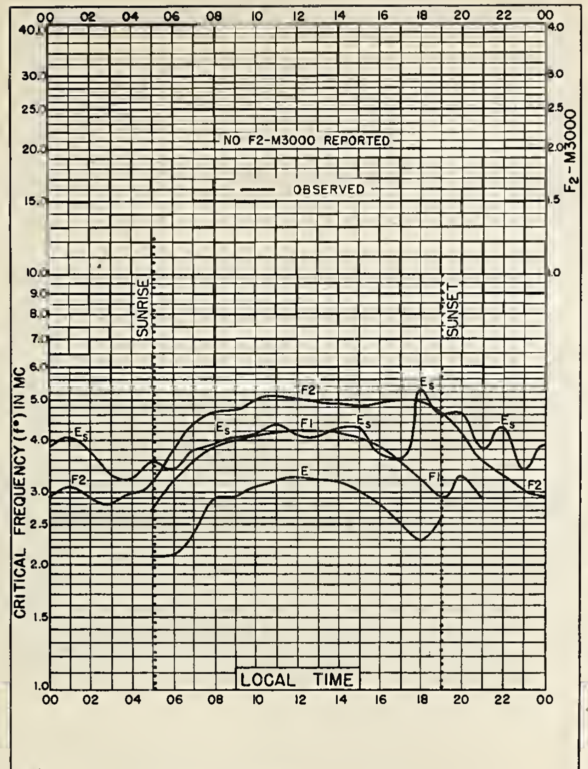

Fig. 101. OTTAWA, CANADA
45.5°N, 75.8°W AUGUST 1943

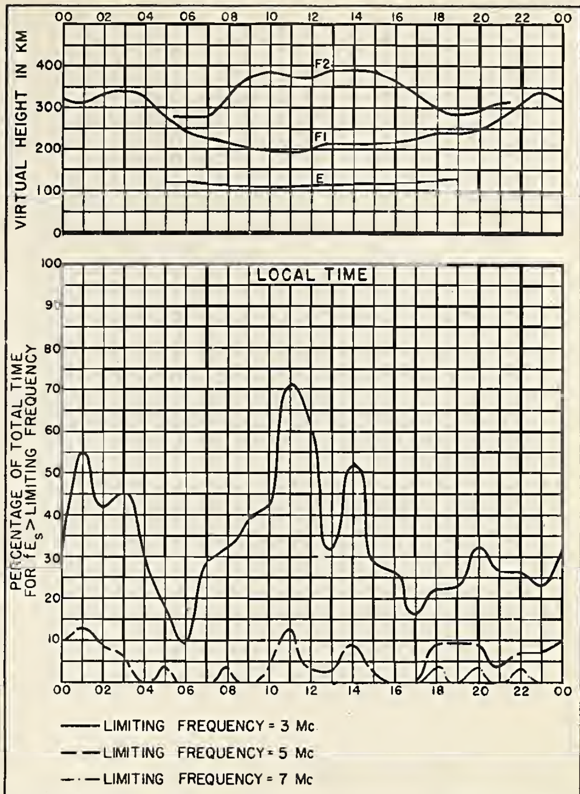

Fig. 102. OTTAWA, CANADA AUGUST 1943

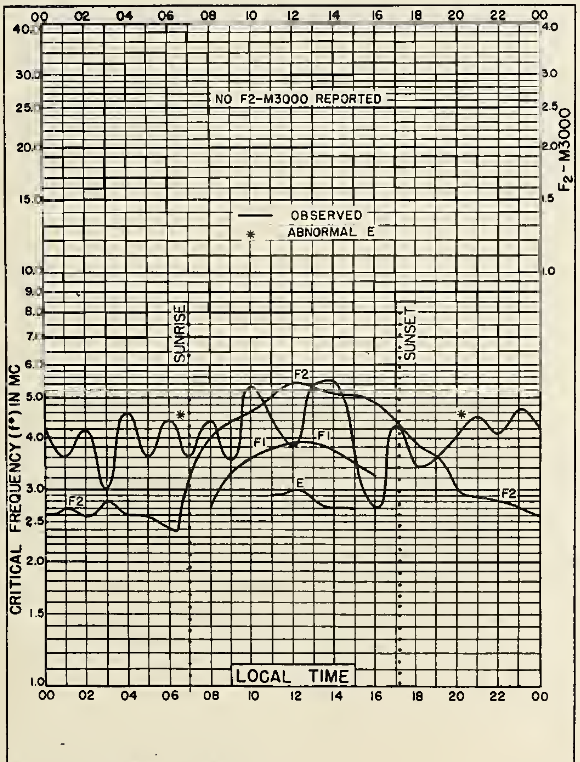

Fig. 103. CHRISTCHURCH, N.Z.
43.5°S, 172.7°E AUGUST 1943

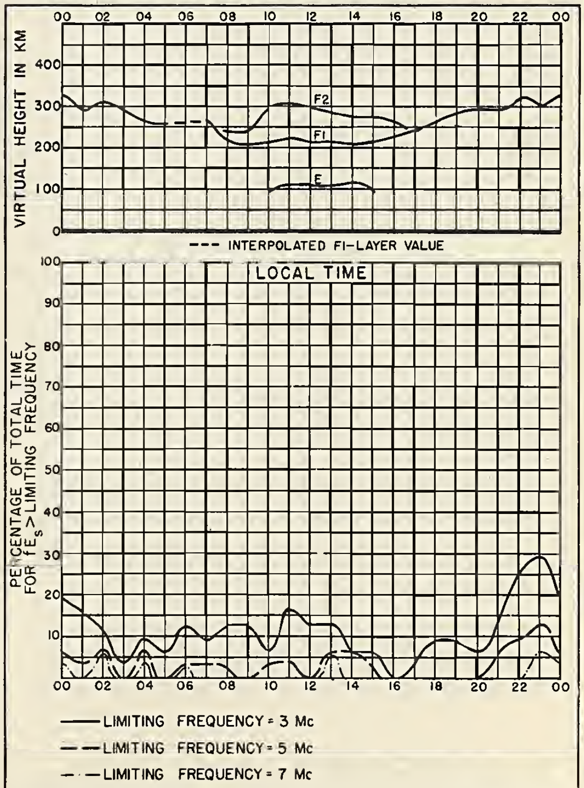

Fig. 104. CHRISTCHURCH, N.Z. AUGUST 1943

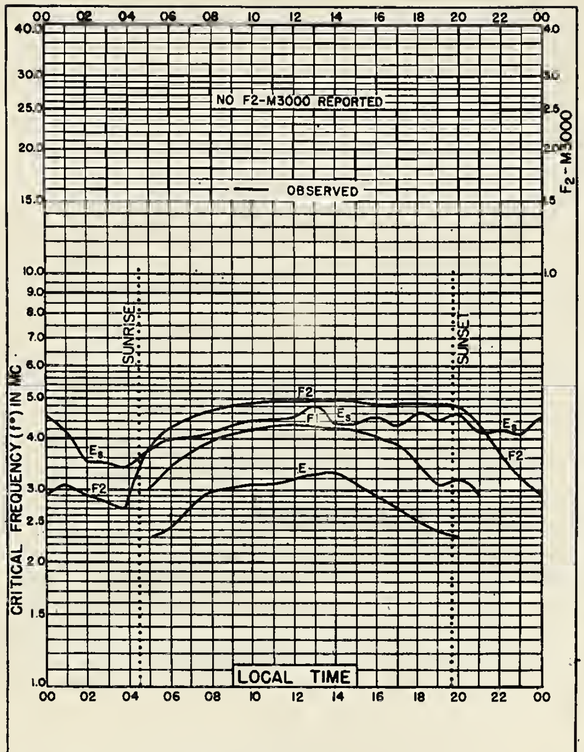

Fig. 105. OTTAWA, CANADA
45.5°N, 75.8°W JULY 1943

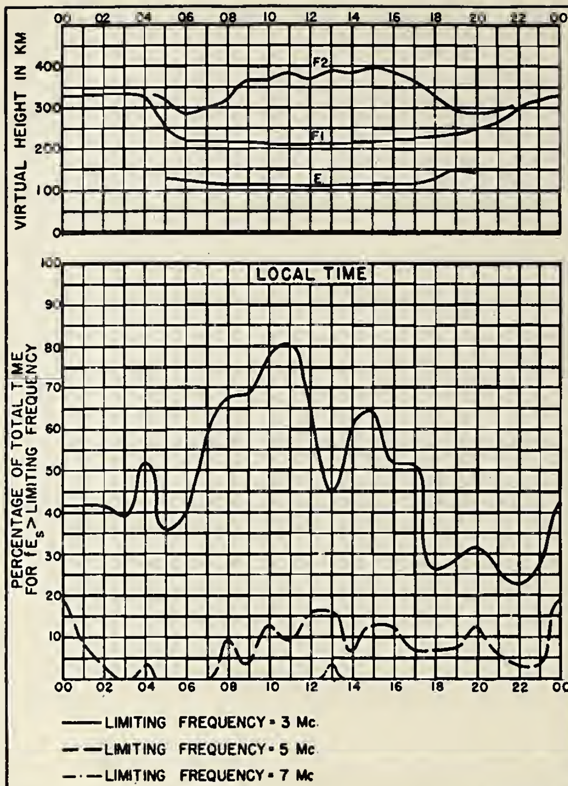

Fig. 106. OTTAWA, CANADA JULY 1943

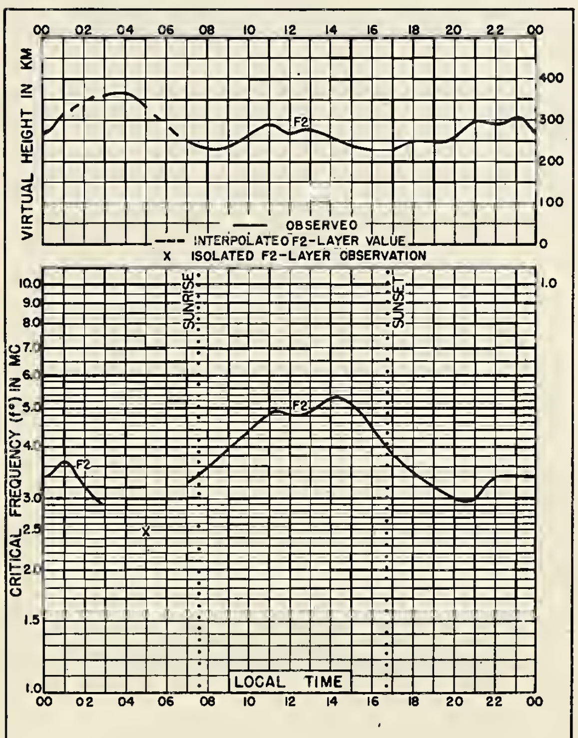

Fig. 107. CHRISTCHURCH, N. Z.
43.5°S, 172.7°E JULY 1943

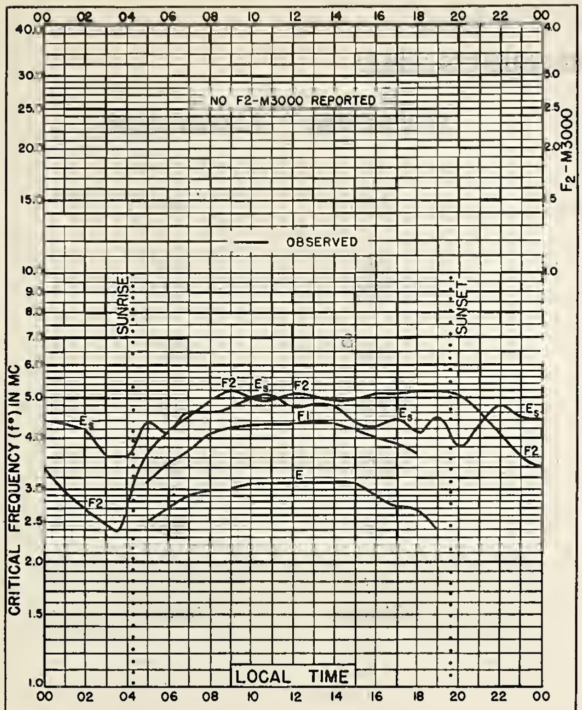

Fig. 108. OTTAWA, CANADA
45.5°N, 75.8°W JUNE 1943

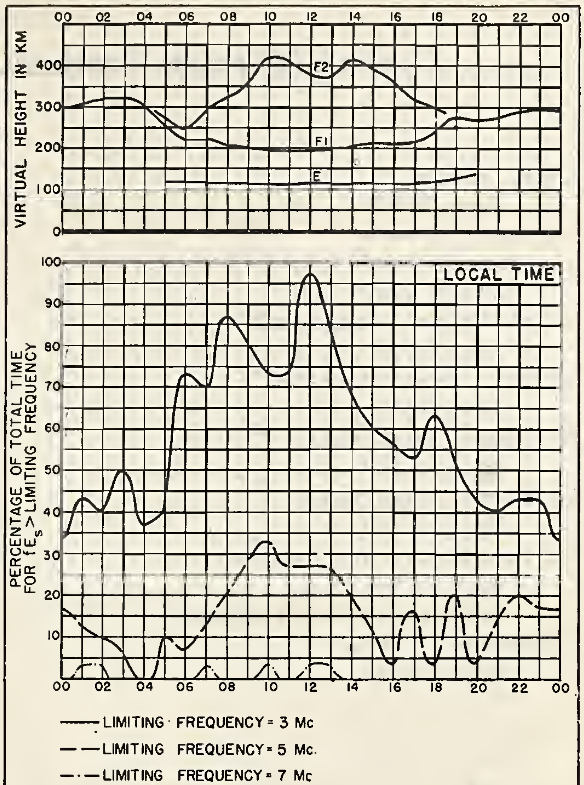

Fig. 109. OTTAWA, CANADA JUNE 1943

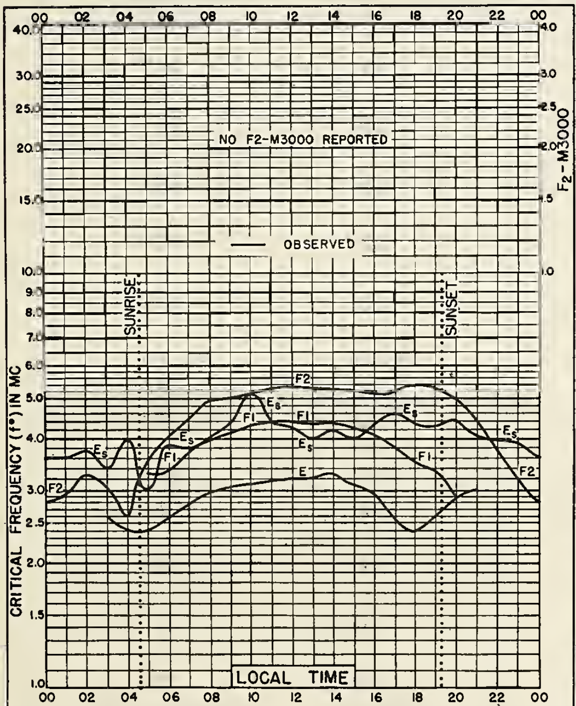

Fig. 110. OTTAWA, CANADA
45.5°N, 75.8°W MAY 1943

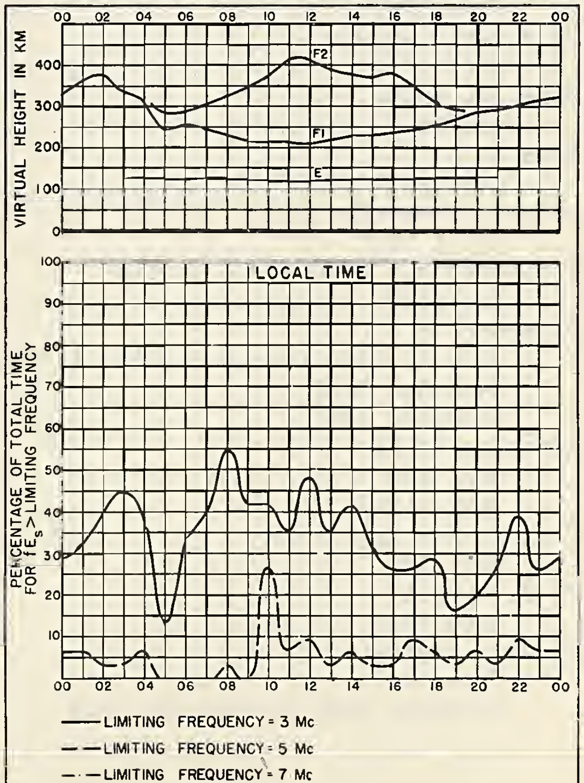

Fig. 111. OTTAWA, CANADA MAY 1943

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CRPL–F. Ionospheric Data.

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Reports issued in past:

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IRPL–C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
IRPL–G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
IRPL–R. Unscheduled reports:
- R4. Methods Used by IRPL for the Prediction of Ionospheric Characteristics and Maximum Usable Frequencies.
- R5. Criteria for Ionospheric Storminess.
- R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
- R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
- R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
- R11. A Nomographic Method for Both Prediction and Observation Correlation of Ionosphere Characteristics.
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